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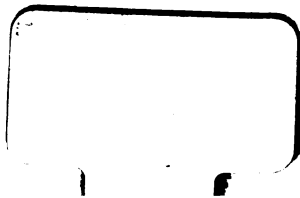
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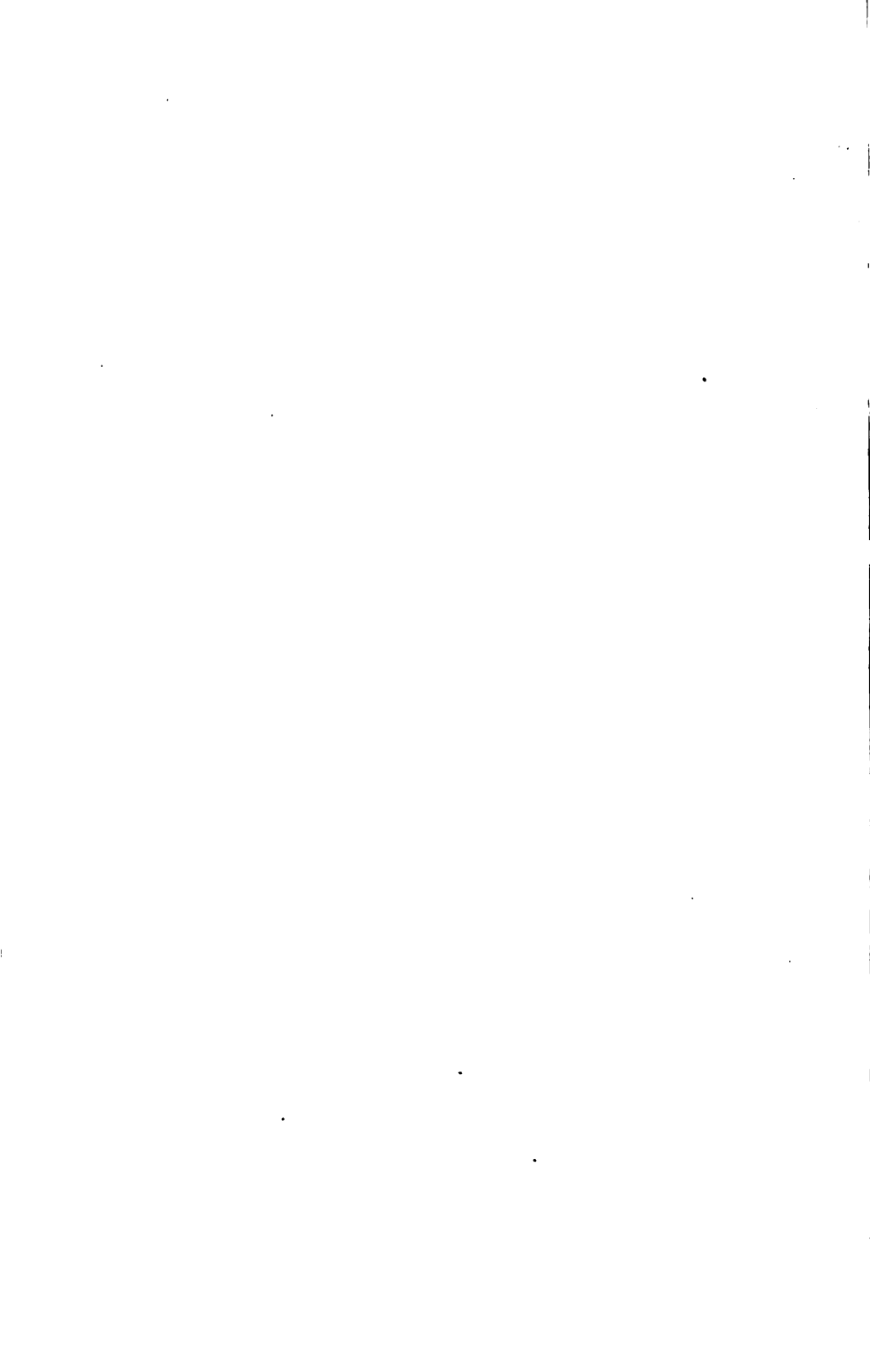


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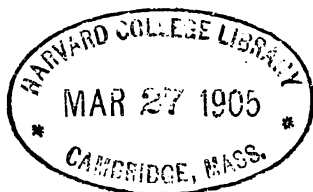
ROYAL SOCIETY OF LONDON.

—
1905.
—

LONDON :
HARRISON AND SONS, ST. MARTIN'S LANE,
Printers in Ordinary to His Majesty.
1905.

No. 9.

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The Society.

HARRISON AND SONS.
PRINTERS IN ORDINARY TO HIS MAJESTY,
ST. MARTIN'S LANE.



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MEMORANDUM AS TO THE WISHES OF THE COUNCIL IN
RESPECT OF BENEFACTIONS TO THE SOCIETY.

From time to time since its foundation, the Royal Society has, through the generosity of benefactors, received funds, now amounting to a very considerable sum.

In the majority of cases the terms of gift have limited the application of the money to certain definite purposes, and, in particular, to the award of medals or other prizes for scientific discoveries or other contributions to the advancement of Natural Knowledge.

Every year the Council have to award several medals, including the Copley, Royal, Rumford, Davy, Darwin, Buchanan, Sylvester, and Hughes Medals, or some of these, and have been led by experience to the conclusion that it is neither to the advantage of the Society nor in the interests of the advancement of Natural Knowledge that this already long list of medals should in future be added to, and that, therefore, no further bequests to be awarded as prizes for past achievements should be accepted by the Society.

They desire, however, to make known that the funds belonging absolutely to the Society, funds tied down by no special directions as to their applications, funds which the Society are free to use for general purposes, are very few indeed. And the President and Council have again and again had the experience that the usefulness of the Society for the advancement of Natural Knowledge has been greatly hampered by the lack of funds of which they could freely make use according to their own judgment.

The President and Council are confident that it would not be difficult, wherever desirable, to associate in some conspicuous manner with any gift to the Society the name of the benefactor, and indeed they would wish to do so.

The President and Council accordingly desire to make it generally known that while they will willingly receive gifts to be applied to special objects or for the benefit of particular sciences indicated by the donors, they consider that, in view of the varying necessities of Science, the most useful benefactions are those which are given to the Society in general terms for the advancement of Natural Knowledge.

YEAR-BOOK
OF
THE ROYAL SOCIETY.
1905.

CALENDAR.

1905.

JANUARY	19.	<i>Ordinary Meeting at 4.30 P.M.</i>
"	26.	" " "
"	31.	<i>Last day for receiving applications for Government Grants.</i>
FEBRUARY	2.	<i>Ordinary Meeting at 4.30 P.M.</i>
"	9.	" " "
"	16.	" " "
"	23.	" " "
MARCH	2.	" " "
"	9.	" " "
"	16.	" " "
"	23.	" " "
"	30.	" " "
APRIL	6.	" " "
"	13.	" " "
MAY	11.	<i>Election of Fellows at 4 P.M.</i>
"	11.	<i>Ordinary Meeting at 4.30 P.M.</i>
"	18.	" " "
"	25.	" " "
JUNE	8.	" " "
NOVEMBER	16.	" " "
"	23.	" " "
"	30.	<i>Anniversary Meeting at 4 P.M. (Thursday).</i>
DECEMBER	7.	<i>Ordinary Meeting at 4.30 P.M.</i>
"	14.	" " "
"	30.	<i>Last day for receiving certificates of Candidates for Election.</i>

THE LIST OF THE ROYAL SOCIETY, JAN. 1, 1905.

HIS SACRED MAJESTY KING EDWARD VII., PATRON.

HIS ROYAL HIGHNESS THE PRINCE OF WALES, K.G.

THE COUNCIL.

SIR WILLIAM HUGGINS, K.C.B., O.M., D.C.L., LL.D.—PRESIDENT.
 ALFRED BRAY KEMPE, M.A.—TREASURER AND VICE-PRESIDENT.
 PROF. JOSEPH LARMOR, D.Sc., D.C.L., LL.D.—SECRETARY.
 SIR ARCHIBALD GEIKIE, D.C.L., Sc.D., LL.D.—SECRETARY.
 FRANCIS DARWIN, M.A., M.B.—FOREIGN SECRETARY.

SHELFORD BIDWELL, Sc.D.
 GEORGE ALBERT BOULENGER,
 F.Z.S.
 COL. DAVID BRUCE, R.A.M.C.
 FRANK WATSON DYSON, M.A.
 PROF. PERCY FARADAY
 FRANKLAND, Ph.D.
 PROF. FRANCIS GOTCH, D.Sc.
 ERNEST WILLIAM HOBSON, Sc.D.
 PROF. JOHN NEWPORT
 LANGLEY, Sc.D.—VICE-PRESIDENT.
 JOHN EDWARD MARR, Sc.D.

SIR WILLIAM DAVIDSON
 NIVEN, K.C.B.—VICE-PRESIDENT.
 PROF. WILLIAM HENRY
 PERKIN, JUNIOR, Ph.D.
 PROF. JOHN PERRY, D.Sc.
 ADAM SEDGWICK, M.A.
 WILLIAM NAPIER SHAW, Sc.D.
 PROF. WILLIAM AUGUSTUS
 TILDEN, D.Sc.—VICE-PRESIDENT.
 REAR-ADMIRAL SIR WILLIAM
 JAMES LLOYD WHARTON,
 K.C.B.

This Council will continue till November 30, 1905.

ROBERT HARRISON—ASST. SECRETARY
 AND LIBRARIAN.

OFFICE STAFF.

T. E. JAMES (*Clerk*), A. H. WHITE (*Assistant Librarian*).
 F. A. TOWLE (*Clerk to the Government Grant Committee*).
 R. L. SHEPPARD. M. MACGREGOR.

FELLOWS OF THE ROYAL SOCIETY, JANUARY 1, 1905.

Date of Election		Service on Council, &c.
1876	Abney, Sir William de Wiveleslie, K.C.B. D.C.L. (Dunelm.) D.Sc. (Vict. and Dub.) F.I.C. F.C.S. F.R.A.S., late Principal Assistant Secretary, Board of Education, South Kensington, retired Capt. R.E. Medal: <i>Bumford. Measham Hall, Leicestershire; Rathmore Lodge, Bolton Gardens South, Earl's Court, S.W.; and Athenæum Club, S.W.</i>	1883-85 91-93
1872	Adams, William Grylls, M.A. D.Sc. F.G.S. F.C.P.S. Vice-President of Physical Soc.; Past Pres. Inst. Elec. Eng.; Professor of Natural Philosophy and Astronomy in King's College, London. <i>43 Campden Hill Square, W.</i>	1882-84 96-98
1889	Aitken, John, F.R.S.E. LL.D. (Glasg.). <i>Ardenlea, Falkirk, N.B.</i>	
1901	Alcock, Alfred William, Major I.M.S. C.I.E. M.B. LL.D. C.M.Z.S. Superintendent of the Indian Museum, and Professor of Zoology in the Medical College, Calcutta. <i>Indian Museum, Calcutta.</i>	
1880	Allbutt, Thomas Clifford, M.A. M.D. LL.D. Hon. D.Sc. (Oxon) F.L.S. Regius Professor of Physic in the University of Cambridge. <i>St. Radegund's, Cambridge.</i>	1896-98
1891	Allerton, Right Hon. William Lawies Jackson, Lord. <i>27 Cadogan Square, S.W.; and Allerton Hall, Chapel Allerton, Leeds.</i>	
1902	Alverstone, Richard Everard Webster, Lord, G.C.M.G., Lord Chief Justice. <i>Hornton Lodge, Kensington, W.</i>	
1888	Andrews, Thomas, F.R.S.E. F.C.S. Mem. Inst. C.E., Telford Medallist and Prizeman, Inst. C.E., Gold Medallist and Bessemer Prizeman, Soc. Engineers. <i>Metallurgical Testing Laboratory, Wortley, near Sheffield.</i>	
1876	Armstrong, Henry Edward. Ph.D. (Lips.) LL.D. (St Andr.) Past Pres. Chem. Soc.; Professor of Chemistry at the City and Guilds of London Central Technical College, South Kensington; Hon. Mem. Pharm. Soc. Lond. <i>55 Granville Park, Lewisham, S.E.; and Athenæum Club, S.W.</i>	1888-90 1900-2 V.P. 1901-2
1880	Attfield, John, M.A. Ph.D. (Tüb.) F.I.C. F.C.S., late Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, Hon. Mem. Amer. Pharm. Assoc., Colls. Pharm. Philad., New York, Mass., Chic., Ontario, and Pharm. Assocs. Liverp., Manch., Maryland, Virg., Georgia, New Hampshire, and Quebec; Hon. Corresp. Mem. Soc. Pharm. Paris; Hon. Mem. Pharm. Soc. Gr. Brit., New South Wales, St. Petersb., Austria, Denmark, East Flanders, Switzerland, Queensland, and Australasia. <i>Ashlands, Watford Herts.</i>	

Date of Election		Service on Council, &c.
1858	Avebury, Right Hon. John Lubbock, Lord, D.C.L. (Oxon.) LL.D. (Cantab., Dubl. et Edin.) M.D. (Würsb.) V.P.L.S. F.G.S. F.Z.S. Pres. S.A. F.E.S. Trust. Brit. Mus.; Pruss. Ord. " <i>Pour la Mérite</i> "; Commandant Legion of Honour of France; Assoc. Acad. Roy. des Sci. Brux.; Hon. Mem. R. Irish Acad., N.Z. Inst., Amer. Ethnol. Soc., Anthropol. Soc. Wash. (U.S.), Brux., Firenze., Anthropol. Verein Graz., Soc. Entom. de France, Soc. Biol. Paris. Allgem. Entomol., Gesell., Soc. Géol. de la Suisse, and Soc. Helvét. des Sci. Nat.; Mem. Amer. Phil. Soc. Philad., K. Vetensk. Soc. Upsala, Westfälischen Prov. Vereins für Wiss. u. Kunst, and Soc. d'Ethn. de Paris; Corresp. Mem. Soc. Nat. des Sci. Nat. de Cherb., Berl. Gesell. für Anthropol., Soc. Romana. di Antrop., Soc. d'Emul. d'Abbeville, Soc. Cient. Argentina, Soc. de Géog. de Lisbon., Acad. Nat. Sci. Philad., Numis. and Ant. Soc. Philad., Amer. Entom. Soc., Soc. Españ. de Hist. Nat.; For. Assoc. Mem. Soc. d'Anthropol. de Paris; For. Mem. Amer. Antiqu. Soc., K. Svenska Vetensk.-Akad., Svenska Soc. Anthropol. Geog., K. Danske Vidensk.-Selskab, For. Sec. R.A. <i>High Elms, Down, Kent.</i>	1861-68 70-72 78-79 93-94 V.P. 1871-72 78-79 93-94
1881	Ayrton, William Edward, Past Pres. Phys. Soc. and Inst. Elect. Eng.; Professor of Electrical Engineering in the Central Technical College of the City and Guilds of London Institute. Medal: <i>Royal. City and Guilds of London Institute, Exhibition Road, S.W.</i>	1889-91
1885	Baird, Andrew Wilson, C.S.I. Colonel R.E. <i>Palmer's Cross, Elgin, N.B.</i> ; and <i>East India United Service Club, S.W.</i>	
1890	Baker, Sir Benjamin, K.C.B. K.C.M.G. LL.D. (Edin.) Sc.D. (Camb.) M.A.I. (Dubl.) Past Pres. Inst. C.E.; Hon. F.R.S. (Edin., N.S. Wales); Hon. Mem. Amer. Soc. Civil and Mechan. Engs., and Lit. and Phil. Soc. Manchester. <i>2 Queen Square Place, Queen Anne's Mansions, Westminster; and Athenæum Club, S.W.</i>	1892-93
1902	Baker, Herbert Brereton, M.A., Lees Reader in Chemistry. <i>Christ Church, Oxford.</i>	
1898	Baker, Henry Frederick, Sc.D. Fellow and Lecturer of St. John's College, Cambridge, and University Lecturer in Mathematics; Past Pres. Camb. Phil. Soc. <i>A, New Court, St. John's College, Cambridge.</i>	
1878	Baker, John Gilbert, F.L.S. late Keeper of the Herbarium, Royal Gardens, Kew. <i>3 Cumberland Road, Kew.</i>	1883-84
1888	Balfour, Right Hon. Arthur James, D.C.L. <i>10 Downing Street, S.W.</i> ; and <i>Whittingehame, Prestonkirk, N.B.</i>	
1884	Balfour, Isaac Bayley, D.Sc. M.D. (Edin.) M.A. (Oxon.) F.R.S.E. F.L.S. F.G.S. Keeper of the Royal Botanic Garden, Edinburgh, Queen's Botanist in Scotland, and Professor of Botany in the University of Edinburgh; Corresp. Mem. Deutsch. Bot. Gesell., Soc. Nat. des Sci. Nat. et Math. Cherbourg, New York Acad. Sci. <i>Inverleith House, Edinburgh; and Athenæum Club, S.W.</i>	1892-94
1873	Ball, Sir Robert Stawell, Kt., Hon. M.A. (Cantab.) LL.D. F.R.A.S. M.R.I.A. Hon. Mem. Phil. Soc. Camb. and Roy. Soc. Edin. Lowndean Professor of Astronomy and Geometry in the University	1897-98

Fellows of the Royal Society.

5

Date of
Election

Service on
Council, &c.

- of Cambridge. *The Observatory, Cambridge; and Athenæum Club, S.W.*
- 1899 Barrett, William F., F.R.S.E. M.R.I.A. Professor of Experimental Physics in the Royal College of Science for Ireland. 6 *De Vesco Terrace, Kingstown, Co. Dublin.*
- Barry (*see Wolfe Barry*).
- 1889 Basset, Alfred Barnard, M.A. *Fledborough Hall, Holyport, Berks.*
- 1868 Bastian, Henry Charlton, M.A. M.D. F.L.S. Coll. Reg. Med. Soc. Emeritus Professor of the Principles and Practice of Medicine, University College; Consulting Physician to University College Hospital; Fellow of Univ. Coll. London; Hon. M.D. Royal University, and Hon. Fellow Roy. Coll. Phys., Ireland; Corr. Mem. Roy. Acad. Med. Turin, Med. Chir. Soc. Bologna, and Soc. Psychol. Physiolog. Paris. 8A *Manchester Square, W.*
- 1894 Bateson, William, M.A., Fellow of St. John's College, Cambridge. 1901-08
Medal: Darwin. *Merton House, Grantchester, Cambridge.*
- 1908 Bayliss, William Maddock, M.A., D.Sc. (Oxon). Assistant Professor of Physiology, University College, London. *St. Cuthbert's, West Heath Road, Hampstead, N.W.*
- 1857 Beale, Lionel Smith, M.B. Coll. Reg. Med. Soc. Emeritus Prof. of the Principles and Practice of Medicine, late Prof. of Physiology and of General and Morbid Anatomy in King's College, London, and Physician to the Hospital; Government Medical Referee for England. 6 *Bentinck Street, Manchester Square, W.* 1865-67
- 1892 Beddard, Frank Evers, M.A. (Oxon.) F.R.S.E. F.Z.S. F.E.S. Prosector of the Zoological Society. Corresp. Mitgl. d. Kön. Böhn. Ges. d. Wissensch. *Zoological Society's Gardens, Regent's Park, N.W.*
- 1873 Beddoe, John, M.D. F.R.C.P. LL.D. (Edin.) B.A., Officier (1^{re} classe) de l'Instr. Publ. France; Vice-Pres. Anthrop. Inst.; Corresp. Mem. Anthrop. Soc. Berlin; Swedish Soc. Anthrop. and Geogr.; Soc. Romana di Antrop.; For. Assoc. Mem. Soc. Anthrop. Paris; Hon. Mem. Nat. Hist. Soc. Bristol, Roy. Inst. Cornwall, Philos. Inst. Bath, Anthrop. Soc. Brussels and Washington, Acad. Anthrop. New York, Amer. Antiq. Soc., Hist. Soc. Dallas, Texas, and of Imp. Soc. Friends of Sci., Moscow. *The Chantry, Bradford-on-Avon; and Athenæum Club, S.W.*
- 1894 Bell, James, C.B. D.Sc. (Dubl.) Ph.D. F.I.C., late Principal of the Inland Revenue Laboratory, Somerset House. 52 *Cromwell Road, Hove, Brighton.*
- 1897 Bell, Robert, I.S.O. M.D. D.Sc. LL.D. Director of the Geological Survey of Canada. *Ottawa, Canada.*
- 1871 Besant, William Henry, Sc.D. F.R.A.S. F.C.P.S. Fellow of St. John's College, Cambridge. *St. John's College, and Spring Lawn, Harvey Road, Cambridge.*
- 1886 Bidwell, Shelford, M.A. Sc.D. LL.B. *Riverstone Lodge, Southfields, Wandsworth, S.W.* 1904-

Date of Election		Service on Council, &c.
1874	Blanford, William Thomas, C.I.E. LL.D. (Univ. McGill) A.R.S.M. F.G.S. F.R.G.S. F.Z.S. Ord. SS ^{rum} . Maur. et Lazar. Ital. Eq.; Soc. Asiat. Beng. Soc. Honor. Medal: Royal. 72 Bedford Gardens, Camden Hill, Kensington, W.	1891-93 1901-03 V.P. 1892-98 1901-03
1878	Bonney, Rev. Thomas George, D.Sc. LL.D. (Univ. McGill) Sc.D. (Dubl.) F.S.A. F.G.S. Soc. Phil. Cantab. Soc.; Acad. Reg. Hib. et Ebor. Soc. Honor.; Soc. Géol. Belg. et Soc. Reg. Canard. Corresp.; Corresp. Mem. Soc. Géol. du Nord de France; Hon. Canon of Manchester; Emeritus Professor of Geology in University College, London. 23 Denning Road, Hampstead, N.W.	1880-82 1895 97-99 V.P. 1898-99
1899	Booth, Right. Hon. Charles, Hon. Sc.D. (Camb.). 24 Great Cumberland Place, W.	
1890	Bosanquet, Robert Holford Macdowall, M.A. Fellow of St. John's College, Oxford. <i>Castillo Zamora, Realejo-Alto, Teneriffe.</i>	
1888	Bottomley, James Thomson, M.A. D.Sc. F.R.S.E. F.C.S. 13 University Gardens, Glasgow.	
1894	Boulenger, George Albert, V.P.Z.S. Corresp. Mem. R. Accad. d. Sci., Turin, Acad. Sci., Philadelphia, New York, Indiana, Imp. Soc. Friends of Sci., Moscow, Senckenb. Soc. Frankfort, Linn. Soc. Bordeaux, Sci. Soc. Boston, Nat. Hist. Soc. Basel, Mus. Nacion. Para, Nat. Ver., Magdeburg, Hon. Mem. Soc. Sci. Chili. 8 Courtfield Road, South Kensington, S.W.; and British Museum (<i>Nat. History</i>).	1903-
1895	Bourne, Alfred Gibbs, D.Sc. Professor of Biology in the Presidency College, Madras. Fellow of University College, London. <i>Presidency College, Madras.</i>	
1902	Bovey, Henry T., M.A. Professor of Civil Engineering and Applied Mechanics, McGill University. <i>McGill University, Montreal, Canada.</i>	
1891	Bower, Frederick Orpen, D.Sc. (Camb.) F.L.S. F.R.S.E. Regius Professor of Botany in the University of Glasgow. 1 St. John's Terrace, Hillhead, Glasgow.	1901-2
1902	Boyce, Rubert, M.B. Holt Professor of Pathology, University College, Liverpool. <i>Park Lodge, Liverpool.</i>	
1888	Boys, Charles Vernon, A.R.S.M. Officier de l'Instr. Publ. France, Hon. Mem. New York Acad. Sci. Medal: Royal. 27 The Grove, Boltons, S.W.	1900-2
1894	Bradford, John Rose, M.D. D.Sc. Physician to University College Hospital; Professor of Medicine in University College, London. 8 Manchester Square, W.	1908-04
1882	Brady, George Stewardson, M.D. LL.D. D.Sc. Professor of Natural History in the Durham College of Science, Newcastle. <i>Mowbray Villa, Sunderland.</i>	
1875	Brandis, Sir Dietrich, K.C.I.E. Ph.D. LL.D. (Edin.) F.L.S., late Inspector General of Forests to the Government of India. <i>Bonn, Germany.</i>	

Date of
Election

Service on
Council, &c.

- 1908 Bridge, Thomas William, M.Sc. (Birm.) Sc.D. (Camb.), F.L.S. F.Z.S. Mason Professor of Zoology and Comparative Anatomy in the University of Birmingham. 132 *Bristol Road, Edgbaston, Birmingham.*
- 1897 Broadbent, Sir William Henry, Bart., K.C.V.O. M.D. (Lond.) LL.D. (Edin. St. Andr.) F.R.C.P. Physician in Ordinary to the King, and to H.R.H. the Prince of Wales; Consulting Physician to St. Mary's Hospital, and to the London Fever Hospital. 84 *Brook Street, W.*
- 1904 Brodie, Thomas Gregor, M.D. Professor-Superintendent, Brown Institution, University of London; Professor of Physiology Royal Veterinary College. 4 *Lancaster Terrace, Regent's Park, N.W.*
- 1879 Brown, Alexander Crum, D.Sc. LL.D. M.D. Professor of Chemistry in the University of Edinburgh. 8 *Belgrave Crescent, Edinburgh.* 1891-92
- 1898 Brown, Ernest William, M.A. Sc.D. Professor of Mathematics in Haverford College. *Haverford College, Haverford, Pennsylvania, U.S.A.*
- 1889 Brown, Horace T., LL.D. (Edin.) F.O.S. F.I.C. F.G.S. F.L.S. 1899-1901
Medal: Royal. 52 *Nevern Square, Kensington, S.W.*
- 1902 Brown, John. Mem. Phys. Soc. *Longhurst, Dunmurry, Belfast.*
- 1883 Browne, Sir James Crichton, Kt., M.D. LL.D. F.R.S.E. 61 *Carlisle Place Mansions, Victoria Street, S.W.*
- 1899 Bruce, David, M.B., Colonel R.A.M.C. **Medal: Royal.** *War Office,* 1904-
68 *Victoria Street, S.W.*
- 1874 Brunton, Sir T. Lauder, M.D. Sc.D. LL.D. (Edin.) Hon. LL.D. 1882-84
(Aberdeen) Coll. Reg. Med. Soc. 10 *Stratford Place, Oxford Street, W.*; and *Athenæum Club.*
- 1895 Bryan, George Hartley, Sc.D. Professor of Mathematics in the University College of North Wales. *Plas Gwyn, Bangor, N. Wales.*
- 1893 Bryce, Right Hon. James, D.C.L. Hon. Fellow, Trinity and Oriel 1899-1900
Colleges, Oxford; Corr. Mem. Inst. de France; Acad. Roy. des Sci. Brux.; R. Accad. delle Sci. Torino, Soc. Romana di Storia Patria; Massachusetts Hist. Soc. 54 *Portland Place, W.*
- 1898 Buchan, Alexander, M.A. LL.D. F.R.S.E. Sec. Scott. Meteorol. Soc. 2 *Dean Terrace, Edinburgh.*
- 1887 Buchanan, John Young, M.A. F.R.S.E. F.C.S. F.R.G.S. *Christ's College, Cambridge.*
- 1857 Buckton, George Bowdler, F.C.S. F.E.S. F.L.S. Corr. Acad. Nat. Sci. 1861-63
Philad.; Mem. Soc. Entom. France. *Weycombe, Haslemere, Surrey.*
- 1879 Buller, Sir Walter Lawry, K.C.M.G. D.Sc. (Cantab.) F.L.S. Corr. Mem. Z.S. *c/o Agent-General for New Zealand, 13 Victoria Street, S.W.*
- 1890 Burbury, Samuel Hawksley, M.A. 17 *Upper Phillimore Gardens, Kensington, W.*
- 1900 Burch, George James, M.A. D.Sc. (Oxon). 28 *Norham Road, Oxford.*
- 1893 Burnside, William, M.A. D.Sc. (Dubl.) Hon. Fellow of Pembroke College, 1901-2
Cambridge; Professor of Mathematics, Royal Naval College, Greenwich. **Medal: Royal.** *The Croft, Bromley Road, Catford, S.E.*

Date of Election		Service on Council, &c.
1904	Burrard, Sidney Gerald, Major R.E. Superintendent of the Trigonometrical Survey of India. <i>Dehra Dun, India.</i>	
1894	Callendar, Hugh Longbourne, M.A., late Fellow of Trinity College, Cambridge; Professor of Physics at the Royal College of Science, London; LL.D. (McGill Univ.) F.R.S. (Canada). 2 <i>Chester Place, Regent's Park, N.W.</i>	1902-04
1871	Carruthers, William, F.L.S. F.G.S. F.R.P.S.E. Fell. Bot. Soc. Edin.; Corresp. Mem. Acad. Nat. Sci. Philad., New York Acad. Sci., Ist. Ven. Sci. Lett. ed Art., Soc. Bot. Copenh., Soc. Géol. Belg.; Hon. Memb. Manch. Lit. and Phil. Soc., Whitby Lit. and Phil. Soc., Chester Nat. Hist. Soc., Nat. Hist. Soc. Glasg., Dumf. and Gall. Nat. Hist. and Antiq. Soc.; Pres. Roy. Micros. Soc.; Past Pres. Linn. Soc.; late Keeper Botanical Department, British Museum; Consulting Botanist, Royal Agricultural Society of England. 44 <i>Central Hill, Norwood, S.E.</i>	1877-79
1887	Cash, John Theodore, M.D. Regius Professor of Materia Medica in the University of Aberdeen. <i>Marischal College, Aberdeen.</i>	
1882	Chamberlain, Right Hon. Joseph, D.C.L. (Oxon.) LL.D. (Cantab. Glasg. Dubl.) Chancellor of the University of Birmingham. 40 <i>Prince's Gardens; and Athenæum Club, S.W.</i>	
1894	Cheyne, William Watson, C.B. M.B. C.M. (Edin.) F.R.C.S. (Eng.) Professor of Surgery in King's College, London. 75 <i>Harley Street, W.</i>	1901-2
1897	Chree, Charles, M.A. Sc.D. (Camb.) LL.D. (Aberd.) Superintendent of the Observatory Department of the National Physical Laboratory. <i>Old Deer Park, Richmond, Surrey.</i>	
1881	Christie, Sir William Henry Mahoney, K.C.B. M.A. Hon. D.Sc. (Oxon). Astronomer Royal, F.R.A.S., F.R. Met. Soc., Corresp. Mem. Acad. Sci. Paris, and Imp. Acad. Sci. St. Petersburg; For. Memb. Roy. Acad. Sci. Palermo; Corresp. Mem. Soc. Spettros. Ital., and Soc. Nationale des Sci. Nat. et Math. Cherbourg. <i>Royal Observatory, Greenwich, S.E.</i>	1883-85 89-91 1900-01 V.P. 1890-91 1900-01
1888	Church, Arthur Herbert, M.A. D.Sc. (Oxon.) F.S.A. F.C.S. F.I.C. Professor of Chemistry in the Royal Academy of Arts; Past President of the Mineralogical Society. <i>Shelsley, Kew Gardens.</i>	
1888	Clarke, Alexander Ross, Colonel R.E. C.B. Hon. F.C.P.S. Hon. F.R.S.E. Corresp. Mem. Imp. Acad. Sci. St. Petersburg. Medal: Royal. <i>Strathmore, Reigate, Surrey.</i>	
1882	Clarke, Charles Baron, M.A. (Cantab.) F.L.S. F.G.S. 13 <i>Kew Gardens Road, Kew.</i>	
1896	Clarke, Sir George Sydenham, Lieut.-Colonel R.E. K.C.M.G. Late Governor of the State of Victoria in the Commonwealth of Australia. 49 <i>Onslow Square, S.W.; and Athenæum Club, S.W.</i>	1888-90
1872	Cleland, John, M.D. D.Sc. LL.D. Professor of Anatomy in the University of Glasgow. <i>University, Glasgow.</i>	1897-98
1848	Clerk, Henry, Major-General R.A. <i>Mountfield, 5 Upper Maze Hill, St. Leonards-on-Sea.</i>	1878-80
	Clifford, Allbutt (<i>see</i> Allbutt).	

Fellows of the Royal Society.

9

Date of Election		Service on Council, &c
1868	Clifton, Robert Bellamy, M.A. (Cantab. et Oxon.) F.R.A.S. Professor of Experimental Philosophy in the University of Oxford; Soc. Lit. Phil. Manc. Soc. Honor. 8 <i>Bardwell Road, Banbury Road, Oxford</i> ; and <i>Athenæum Club</i> .	1871-73 85-87 96-98 V.P. 1896-98
1896	Collie, J. Norman, Ph.D. F.C.S. Professor of Organic Chemistry, University College, London. 16 <i>Camden Grove, Kensington, W.</i>	
1903	Copeman, Sidney Monokton, M.A. M.D. (Camb.) F.R.C.P. Medical Inspector to the Local Government Board. Medal: Buchanan. 57 <i>Redcliffe Gardens, S.W.</i>	
1878	Cotterill, James Henry, M.A., late Professor of Applied Mechanics Royal Naval College, Greenwich. <i>Braeside, Speldhurst, Kent.</i>	
1878	Crawford, James Ludovic, Earl of, K.T. LL.D. F.R.A.S., Trust. Brit. Mus., Leg. Honor. Com.; Ord. Imp. Bras. Rosae Com.; Acad. Reg. Sci. Berol. Soc. Honor. 2 <i>Camden Square, W.</i> ; and <i>Haigh Hall, Wigan.</i>	1878-79
1885	Creak, Ettrick William, C.B. Captain R.N. M. Inst. Elect. Eng. 9 <i>Hervey Road, Blackheath, S.E.</i>	1898-1900
1868	Crofton, Morgan William, D.Sc. Fellow of the Royal University of Ireland. <i>Atrato, George Street, Ryde, Isle of Wight.</i>	
1868	Crookes, Sir William, D.Sc. (Oxon. Ireland), Past Pres. Chem. Soc., Brit. Assoc., Inst. Elect. Eng.; Hon. Mem. Roy. Soc. N.S.W., Pharm. Soc., Chem. Metall. and Mining Soc. of South Africa, Amer. Chem. Soc., Amer. Philos. Soc., Roy. Soc. Sci. Upsala, Psychol. Soc. Paris, "Antonio Alzate" Sci. Soc. Mexico, Sci. Soc. Bucharest; Corresp. Mem. Bataafsch Genoots. Rotterdam, Soc. d'Encouragement pour l'Indust. Paris. Medals: Copley, Royal, Davy. 7 <i>Kensington Park Gardens, W.</i> ; and <i>Athenæum Club, S.W.</i>	1877-79 94-96 V.P. 1895-96
1879	Cross, Right Hon. Richard Assheton, Viscount, G.C.B. G.C.S.I. D.C.L. LL.D. 12 <i>Warwick Square and Athenæum Club, S.W.</i> ; and <i>Eccle Riggs, Broughton-in-Furness, Lancashire.</i>	1880-81
1889	Cunningham, David Douglas, M.B. C.M. (Edin.) C.I.E. F.L.S. C.M.Z.S. Lieut.-Col. Bengal Medical Service (retired); late Honorary Surgeon to the Viceroy of India; late Professor of Physiology in the Medical College and Fellow of the University of Calcutta. <i>Torre Mount, Torquay.</i>	
1891	Cunningham, Daniel John, M.D. (Edin. and Dubl.), D.Sc. D.C.L. LL.D. Professor of Anatomy in the University of Edinburgh. 18 <i>Grosvenor Crescent, Edinburgh.</i>	1898-99
1898	Curzon of Kedleston, George Nathaniel, Lord. <i>Government House, Calcutta.</i>	
1880	Dallinger, Rev. William Henry, LL.D. Sc.D. (Dubl.) D.D. (Durh.) F.L.S. Vice-Pres. B.M.S.; Hon. Mem. Amer. Micros. Soc. <i>Ingleside, Newstead Road, Lee, S.E.</i>	
1882	Darwin, Francis—Foreign Secretary—M.A. and M.B. (Cantab.) F.L.S. F.Z.S., late Fellow of Christ's College, and Reader in Botany in the Univ. of Cambridge. Mem. Soc. Nat. Sci. et Math. de Cherbourg. 30 <i>Kensington Square, W.</i>	1894-95 1902- For. Sec. 1903-

Date of Election		Service on Council, &c.
1879	Darwin, George Howard, M.A. LL.D. (Glasg.) Sc.D. (Dubl.) Ph.D. (Padua, Gött.) Hon. Mem. Univ. Padua; Doctor of Mathematics, Univ. Christiania; F.R.A.S. F.M.S. Hon. F.R.S.E. Hon. Mem. R.I.A.; Fellow of Trinity College, and Plumian Professor of Astronomy and Experimental Philosophy in the University of Cambridge; For. Mem. R. Accad. dei Lincei, Rome; and Amer. Acad. Arts and Sci.; Hon. Fell. Astron. and Phys. Soc. Toronto. R. Accad. di Sci. Lett. ed. Arti, Padua; Assoc. Nat. Acad. Sci. Washington; Hon. Mem. New York Acad. Sci.; Mem. Amer. Philos. Soc. Philad.; Corr. Mem. Accad. de Zelanti, Acireale; Assoc. Acad. Roy. de Belgique. Medal: Royal. Newnham Grange, Cambridge.	1884-85 1886-87
1903	Darwin, Horace, M.A. (Camb.) <i>The Orchard, Cambridge.</i>	
1895	Davey, Right Hon. Horace, Lord, M.A. D.C.L. 86 <i>Brook Street, W.</i> ; and <i>Verdley Place, Fernhurst, Sussex.</i>	
1900	David, T. W. Edgeworth, B.A. (Oxon.) F.G.S. Professor of Geology in the University of Sydney. <i>The University, Sydney, N.S.W.</i>	
1867	Dawkins, W. Boyd, M.A. D.Sc. (Oxon.) F.S.A. F.G.S. Assoc. Inst. C.E. Hon. Fellow of Jesus Coll. (Oxford); Professor of Geology and Palæontology in the Victoria University, Owens Coll. Manchester; Soc. Anthropol. Berol., Acad. Sci. Nat. Philad. et Soc. Nat. Hist. Bost. Corresp. Soc. Phil. Amer. et Acad. Sci. Nov. Ebor. et Soc. Geol. Belg. Soc. Honor. <i>Fallowfield House, Fallowfield, Manchester; and Athenæum Club, S.W.</i>	1889-91
1861	Debus, Heinrich, Ph.D. F.C.S., late Prof. of Chemistry at the Royal Naval College, Greenwich, and Lecturer at Guy's Hospital. <i>4 Schlangenweg, Cassel, Hessen, Germany.</i>	1870-72 81-83
1892	Devonshire, Spencer Compton Cavendish, Duke of, K.G. M.A. LL.D. Hon. Mem. Inst. C.E. Chancellor of the University of Cambridge. <i>Devonshire House, Piccadilly, W.</i> ; and <i>Chatsworth, Derbyshire.</i>	
1877	Dewar, Sir James, M.A. V.P.C.S. F.I.C. F.R.S.E. Hon. LL.D. (Edin., Glasg. and St. And.) D.Sc. (Vict.) Hon. Mem. Inst. C.E., Lit. and Phil. Soc. Manc., Pharm. Soc. Lond., Phil. Soc. Philad., Phil. Soc. Glasg., Soc. Phys. Verein, Frankfurt, R. Ist. Lomb. di Scienze, Lettere ed Arti, Milan; Fellow of Peterhouse College, Cambridge; Jacksonian Prof. of Natural Experimental Philosophy in the University of Cambridge; Fullerian Prof. of Chemistry in the Royal Institution. Medal: Rumford. <i>1 Scroope Terrace, Cambridge; and Royal Institution, Albemarle Street, W.</i>	1885-86 1898-1900 V.P. 1899-1900
1885	Divers, Edward, M.D. Emeritus Professor of Chemistry in the Imperial University, Japan; Second Class, Order Sacred Mirror; Third Class, Order Rising Sun, Japan. <i>3 Canning Place, Palace Gate, W.</i>	
1904	Dixon, Alfred Cardew, Sc.D. (Camb.) M.A. (Lond.) F.C.P.S. Professor of Mathematics, Queen's College, Belfast. <i>Almora, Myrtlefield Park, Belfast.</i>	
1886	Dixon, Harold Baily, M.A. F.C.S. Professor of Chemistry and Director of the Chemical Laboratories in Owens College, Man-	1902-04

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Council, &c.

- chester. *Owens College, Manchester; Beechey House, Victoria Park, Manchester.*
- 1904 Dobbie, James Johnston, M.A. D.Sc. Director of the Museum of Science and Art, Edinburgh. *27 Polwarth Terrace, Edinburgh*
- 1896 Downing, Arthur Matthew Weld, M.A. D.Sc. (Dubl.) F.R.A.S. F.R.G.S. Superintendent of the Nautical Almanac: Hon. Mem. Roy. Astron. Soc. Canada; Hon. Mem. Soc. Astron. Mexico. *3 Granville Park, S.E.*
- 1855 Ducie, Henry John Moreton, Earl of, F.G.S. *Tortworth Court, Falfield, Gloucestershire.*
- 1893 Dunstan, Wyndham R., M.A. (Oxon.) F.C.S. F.I.C. Hon. Mem. Aristotelian Soc.; Corr. Mem. Inst. Égyptien; Director of the Imperial Institute; formerly Professor of Chemistry to the Pharmaceutical Society of Great Britain and Lecturer on Chemistry at St. Thomas' Hospital. *Imperial Institute, South Kensington, S.W.*
- 1875 Dupré, August, Ph.D. (Heidelb.) F.C.S. F.I.C. Emeritus Professor of Chemistry to the Westminster Hospital. *2 Edinburgh Mansions, Howick Place, Westminster, S.W.; and Mount Edgcumbe, Benhill Road, Sutton, Surrey.*
- Dyer (see Thiselton-Dyer).
- 1901 Dyson, Frank Watson, M.A. (Cantab.) Sec. R.A.S. Chief Assistant at the Royal Observatory, Greenwich. *6 Vanbrugh Hill, Blackheath, S.E.* 1908-
- 1896 Elgar, Francis, LL.D. (Glasg.) F.R.S.E. F.S.A. Mem. Inst. C.E.; Fellow Royal School of Naval Architecture, V.P. Inst. Naval Architects, Chev. Lég. Hon. France, formerly Professor of Naval Architecture in the University of Glasgow. *18 Cornwall Terrace, Regent's Park, N.W.*
- 1895 Eliot, Sir John, K.C.I.E. M.A., late Meteorological Reporter to the Government of India, and Director-General of Indian Observatories. *Bon Porto, Cavalaire-var (Department), France.*
- 1873 Ellery, Robert Lewis John, C.M.G. F.R.A.S., late Government Astronomer, and Director of the Observatory. *Melbourne, Victoria*
- 1891 Elliott, Edwin Bailey, M.A. F.R.A.S. Waynflete Professor of Pure Mathematics in the University of Oxford; Fellow of Magdalen College, Oxford. *4 Bardwell Road, Oxford.* 1899-01
- 1898 Ellis, William, F.R.A.S. F.R. Met. Soc. Memb. Inst. Elect. Eng. late Superintendent of the Magnetical and Meteorological Department, Royal Observatory, Greenwich. *Montpelier House, Blackheath, S.E.*
- 1897 Elwes, Henry John, F.L.S. F.Z.S. F.E.S. *Colesborne Park, near Cheltenham.*
- 1869 Esson, William, M.A. F.C.S. F.R.A.S. Savilian Professor of Geometry in the University of Oxford, Fellow of New College, Senior Bursar of Merton College. *Merton College; and 13 Bradmore Road, Oxford.*

Date of Election		Service on Council, &c.
1901	Evans, Arthur John, M.A. LL.D. (Edin.) D. Litt. (Dubl.) V.P.S.A. Fellow of Brasenose College, and Keeper of the Ashmolean Museum, Oxford. <i>Youlbury, Oxford.</i>	
1864	Evans, Sir John, K.C.B. D.C.L. (Oxon., and Trin. Coll. Toronto), LL.D. (Dubl. and Toronto) Sc.D. (Camb.) Trust. Brit. Mus. F.S.A. F.L.S. F.G.S. F.C.S. F.Z.S. Assoc. I.C.E. Pres. Num. Soc. Hon. M.R.I.A. Hon. F.S.A. (Scot.) Comm. of the Ord. of St. Thiago of Port.; Corresp. Inst. de France (Acad. des Inscip.); Hon. Mem. of the Amer. Phil. Soc., Amer. Acad. Arts and Sciences, Amer. Ethnol. Soc., Num. and Ant. Soc. of Philadelphia, Amer. Num. and Archæol. Soc. Anthropol. Soc. Washington, Soc. Franç. de Numism., Acad. d'Archéol. de Belg., Soc. Géol. de Belg., Soc. Num. de Belg., Soc. Ital. d'Anthrop., Acad. Sci. and Num. Soc. Sweden, Soc. Roy. Gr. Duc. de Luxembourg, Soc. Anthropol. de Brux., et de Lyons, Soc. de Borda. Dax., Soc. Polym. du Morbihan, Soc. Suisse de Numism. and Archæol. Soc. of Athens; For. Mem. of the Soc. Ant. of Sweden, Soc. Anthropol. de Paris, and the Numism. Soc. of the Netherlands; Corr. Mem. of the Acad. Sci. Bologna, Soc. Romana di Antrop., Inst. di Corr. Arch., Acad. Valdarn., Anthropol. Soc. of Berlin, and Soc. d'Emul. d'Abbeville. <i>Nash Mills, Hemel Hempstead; and Athenæum Club.</i>	1867-68 73-75 78-98 Treas. 1878-98
1898	Ewart, James Cossar, M.D. Professor of Natural History in the University of Edinburgh. <i>The University, Edinburgh.</i>	
1887	Ewing, James Alfred, Hon. M.A. (Camb.) LL.D. (St. And. Edin.) F.R.S.E. M. Inst. C.E.; Director of Naval Education; Hon. Mem. Lit. Phil. Soc. Manchester; Corresp. Reale Accad. Sci. Turin. Medal: Royal. <i>Royal Naval College, Greenwich; and Athenæum Club, S.W.</i>	1896-98
1900	Farmer, John Bretland, M.A. (Oxon.) F.L.S. Professor of Botany in the Royal College of Science, London. <i>Claremont House, Wimbledon Common.</i>	
1877	Fayrer, Sir Joseph, Bart. K.C.S.I. Surgeon-General K.H.P. LL.D. (Edin. and St. And.) M.D. F.R.C.P. (Lond.) F.R.C.S. (Eng. and Edin.) F.R.S.E. Physician Extraordinary to the King. <i>Lrmorna, Falmouth.</i>	1895-96
1899	Fenton, Henry John Horstman, M.A. (Camb.) 19 <i>Brookside, Cambridge.</i>	
1876	Ferrier, David, M.A. (Aberd.) M.D. (Edin.) LL.D. F.R.C.P. Professor of Neuro-pathology, King's College, London. Medal: Royal. <i>34 Cavendish Square, W.; and Athenæum Club, S.W.</i>	1886-88
1886	Festing, Edward Robert, C.B. Major-General, R.E. (retired). Late Science Museum Director, Victoria and Albert Museum. 30 <i>Queen's Gate Terrace, S.W.</i>	
1892	Fleming, John Ambrose, M.A. (Camb.) D.Sc. (Lond.) late Fellow of St. John's College, Cambridge; Fellow and Professor of Electrical Engineering in University College, London. <i>University College, Gower Street, W.C.</i>	

Date of Election		Service on Council, &c
1889	Fletcher, Lazarus, M.A. (Oxon.) F.G.S. F.C.S. Keeper of Minerals in the British Museum. <i>Natural History Museum, Cromwell Road; and 35 Woodville Gardens, Ealing, W.</i>	1895-96 96-97
1887	Forbes, George, M.A. F.R.S.E. F.R.A.S. Mem. Inst. C.E. M.I.E.E. Chev. Lég. Honor. Memb. Astron. Gesell. Vienna, Amer. Phil. Soc., and Franklin Inst.; formerly Professor of Nat. Phil. in Anderson's College, Glasgow. <i>34 Great George Street, S.W.</i>	
1886	Forsyth, Andrew Russell, M.A. Sc.D. (Camb.) Hon. Sc.D. (Dubl. Vict.) Hon. LL.D. (Glasg.) F.C.P.S. F.R.A.S. Hon. F.R.S.E. Hon. Mem. Lit. Phil. Soc. Manch., Soc. Corr. R. Ist. Lomb.; Sadlerian Professor of Pure Mathematics in the University of Cambridge; Fellow of Trinity College, Cambridge. Medal: Royal. <i>Trinity College, Cambridge; and Athenæum Club, S.W.</i>	1893-95
1869	Foster, George Carey, B.A. LL.D. F.C.S. Principal of, and late Professor of Physics in, University College, London. <i>Ladywalk, Rickmansworth, Herts; and Athenæum Club, S.W.</i>	1870-72 77-78 83-85 91-93 1901-03 V.P. 1891-93 1902-03
1872	Foster, Sir Michael, K.C.B. M.D. B.A. (Lond.) Hon. M.A. (Cantab.) D.C.L. (Oxon.) LL.D. (Glasg., St. And. and Univ. McGill) Sc.D. (Dubl.) F.L.S. F.C.S. For. Mem. R. Accad. dei Lincei, Roma, R. Accad. delle Scienze, Torino, Amer. Acad. Sci., Amer. Phil. Soc.; Corresp. Étrang. Acad. Roy. de Méd. Belg.; Hon. Mem. Roy. Irish Acad., Lit. and Phil. Soc. Manc., Asiat. Soc. Beng., Roy. Soc. N.S. Wales, Med. Chir. Soc., Roy. Agric. Soc., Pharm. Soc. Lond., Bost. Soc. Nat. Hist., Soc. Helvét des Sci. Nat., Acad. Imp. Milit. de Méd. St. Petersburg, R. Accad. Med. Torino, Soc. Roy. Sci. Med. Nat. Brussels; Mem. Assoc. Soc. de Biol. Paris; Mem. K. Vetensk.-Soc. Upsala; Honorary Perpetual President of the International Congress of Physiology; Ehrenmitglied d. Kaiser kon. Gesell. d. Aerzte, Vienna; late Professor of Physiology in the University of Cambridge. <i>Great Shelford, Cambridge.</i>	1876-77 81- Sec. 1881-1908 V.P. 1903-4
1891	Frankland, Percy Faraday, Ph.D., M.Sc. A.R.S.M. Professor of Chemistry in the University of Birmingham. <i>The University, Birmingham.</i>	1903-
1877	Fraser, Sir Thomas Richard, M.D. (Edin.) F.E.C.P. & F.R.S. (Edin.) LL.D. (Aberd. and Glasg.) Professor of Materia Medica and Clinical Medicine in the University of Edinburgh. Hon. Physician to the King in Scotland. <i>13 Drumshough Gardens, Edinburgh.</i>	
1894	Froude, Robert Edmund. Superintendent of the Admiralty Experimental Works, Gosport. <i>North Lodge, Alverstoke, Gosport.</i>	
1888	Fry, Right Hon. Sir Edward, B.A. (Lond.) D.C.L. (Oxon.) LL.D. (Edin.) F.S.A. F.L.S. Fellow of the University of London, and of	

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- University College, London; and Hon. Fellow, Balliol Coll., Oxon. *Failand House, Failand, near Bristol.*
- 1892 Gadow, Hans Friedrich, Ph.D. (Jena) Hon. M.A. (Camb.) Strickland 1899-1901
Curator and Lecturer on the Advanced Morphology of Vertebrata in the University of Cambridge. *Zoological Laboratory, Cambridge.*
- 1893 Gairdner, Sir William Tennant, K.C.B. M.D. (Edin.) Hon. M.D. (Dubl.) Hon. LL.D. (Edin.) F.R.C.P. (Edin.) Hon. F.R.C.P. (Ireland) late Professor of Medicine in the University of Glasgow; Hon. Physician in Ordinary to the King in Scotland. 32 *George Square, Edinburgh.*
- 1860 Galton, Francis, M.A. (Cantab.) D.C.L. (Oxon.) Sc.D. (Camb.) Officier 1865-66
de l'Instruction Publique, France; Corresp. Memb. of the 70-72
Geograph. Societies of Berlin and Vienna, and of Anthropol. Soc. 76-77
of Rome; Hon. Memb. of Geograph. Soc. of Italy, and Inst. 82-84
Internat. de Statistique. Medal: Royal, Darwin. 42 *Rutland V.P.*
Gate, S.W. 1870-72
76-77
83-84
- 1899 Gamble, James Sykes, C.I.E. M.A. (Oxon.) F.L.S., late Conservator of Forests in India, and Director of the Imperial Forest School, Dehra Dun. *Highfield, East Liss, Hants; and Athenæum Club.*
- 1872 Gamgee, Arthur, M.D. F.R.C.P. (Lond.) LL.D. (Edin.) Emeritus 1886-88
Professor of Physiology in Owens College, Victoria University; late Fullerian Professor of Physiology in the Royal Institution. 5 *Avenue du Kursaal, Montreux, Switzerland.*
- 1890 Gardiner, Walter, Sc.D. M.A. Fellow and Bursar of Clare College, Cambridge. Medal: Royal. *St. Awdreys, Hill's Road, Cambridge.*
- 1858 Garrod, Sir Alfred Baring, M.D. Coll. Reg. Med. Socius; Physician Extraordinary to the Queen; Consulting Physician to King's College Hospital. 10 *Harley Street, W.*
- 1882 Gaskell, Walter Holbrook, M.A. M.D. (Camb.) LL.D. (Edin. and Univ. 1895-97
McGill) Fellow of Trinity Hall and University Lecturer in Physiology, Cambridge; F.R. Med. Chir. Soc., Corr. Mem. Acad. Imp. Milit. de Méd. St. Petersburg. Medal: Royal. *The Uplands, Great Shelford, near Cambridge.*
- 1865 Geikie, Sir Archibald, Knt. —Secretary—D.C.L. (Oxon.) Sc.D. (Cantab. 1885-87
Dubl.) LL.D. (Edin. Glasg. St. And.) F.R.S.E. F.G.S. F.Z.S., late 89-93
Director-General of the Geological Survey of the United Kingdom, 1903-
and of the Museum of Practical Geology, London. Corresp. Inst. Sec.
France (Acad. Sci.); Corr. Mem. Acad. Berlin, Vienna, Turin, 1903-
Valdarnese del Poggio, Philad., K. Gesell. Wissen. Gött., Nat. For. Sec.
Hist. Soc. Boston, Geograph. Soc. Italy, Netherlands; For. Mem. 1889-93
R. Accad. Lincei, Rome, Acad. Stockholm, Christiania, Amer. V.P.
Acad. Sci. Boston; Assoc. Nat. Acad. Sci. Washington, Acad. Roy. 1885-87
Sci. Belgium; Hon. Mem. Inst. Civ. Eng., Phil. Soc. Camb., York, Fed. Inst. Min. Eng., K. Leop.-Carol. Deutsch Akad. Halle, Soc. Españ. Hist. Nat. Madrid, Accad. Sci. Acireale, Imp. Soc. Nat. St. Petersburg, Moscow, Soc. Min. St. Petersburg, Geol. Soc.

Fellows of the Royal Society.

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Date of
Election

Service on
Council, &c.

- Edinburgh, Glasgow, Liverpool, Manchester, Stockholm, Acad. Sci.
New York, National Geograph. Soc. Washington. Medal: Royal.
10 *Chester Terrace, Regent's Park, N.W.*
- 1875 Geikie, James, LL.D. D.C.L. (Dunelm.) F.R.S.E. F.R.G.S. F.G.S.
Murchison Professor of Geology and Mineralogy in the University
of Edinburgh; Hon. Memb. Phil. Soc. York, Lit. Phil. Soc.
Manch., Geol. Soc. Stockholm, Vidensk.-Selsk. Christiania, Geol.
Palæont. Hydrol. Belg., Gesell. f. Erdk. Berlin, Soc. Geogr.
Neuchâtel; Memb. Amer. Phil. Soc., Corresp. Memb. Acad. Sci.
Philadelphia, Acad. Sci. New York. *Kilmorie, Colinton Road,
Edinburgh.*
- 1892 Giffen, Sir Robert, K.C.B. LL.D. (Glasg.). *Chanctonbury, Haywards Heath.* 1903-04
- 1891 Gilchrist, Percy Carlyle, A.R.S.M. *Frognaal Bank, Finchley Road,
Hampstead, N.W.*
- 1883 Gill, Sir David, K.C.B. LL.D. (Aberd. and Edin.) Hon. F.R.S.E.
F.R.A.S. F.R.G.S. His Majesty's Astronomer at the Cape of Good
Hope; *Medjidie*, Third Order, Turkey; Trustee of the South
African Museum, Corresp. Inst. Fr. (Acad. Sci.); Corresp. Mem.
Acad. Imp. Sci. S. Petersb.; Akad. Wiss. Berl.; Soc. degli
Spettroscop. Ital. Rome; Soc. Nat. des Sci. Nat. et Math. Cherb.;
Soc. Geogr. Lisbon; For. Mem. Akad. Wetensch. Amsterd.; Nat.
Acad. Sci. Washington, and Soc. Holl. des Sci. Haarlem; Hon.
Mem. New York Acad. Sci. Medal: Royal. *Royal Observatory,
Cape of Good Hope; and Athenæum Club.*
- 1875 Glaisher, James Whitbread Lee, Sc.D. (Camb. and Dubl.) Past President 1883-84
R.A.S. and C.P.S. and Lond. Math. Soc. *Trinity College, Cam-
bridge.* 90-92
- 1882 Glazebrook, Richard Tetley, M.A. Hon. Sc.D. (Vict.) F.C.P.S. Fellow 1892-94
of Trinity College, Cambridge; Director of the National Physical
Laboratory; late Principal of University College, Liverpool.
Bushy House, Teddington, Middlesex; and Athenæum Club, S.W.
- 1882 Godman, Frederick Ducane, D.C.L. (Oxon.) F.L.S. F.G.S. F.E.S. 1891-93
Trustee of the British Museum. 10 *Chandos Street, Cavendish
Square, W.; and South Lodge, Horsham.*
- 1880 Godwin-Austen, Henry Haversham, Lieut.-Col. F.Z.S. F.R.G.S. *Nore,
Godalming.*
- 1902 Goldie, Right Hon. Sir George D. Taubman, K.C.M.G. *Naval and
Military Club, 94 Piccadilly, W.*
- 1865 Gore, George, LL.D. (Edin.). *Inst. Sci. Research, 20 Easy Row,
Birmingham.*
- 1896 Gorst, Right Hon. Sir John Eldon, K.C. M.A. Hon. Fellow of St. 1901-03
John's College, Cambridge. *Queen Anne's Mansions, St. James's
Park, S.W.; and Howes Close, Cambridge.*
- 1872 Goschin, Right Hon. George Joachim, Viscount, M.A. *Seacox Heath,
Hawkhurst, Kent.*
- 1892 Gotch, Francis, D.Sc. M.A. (Oxon.) Waynflete Professor of Physiology 1904-
in the University of Oxford. *The Lawn, Banbury Road, Oxford.*

Date of
ElectionService on
Council, &c.

- 1887 Gowers, Sir William Richard, M.D. F.R.C.P. Fellow of University College, London; Consulting Physician to University College Hospital; Physician to the National Hospital for the Paralysed and Epileptic. 50 *Queen Anne Street*, W.
- 1881 Grant Duff, Right Hon. Sir Mountstuart Elphinstone, G.C.S.I. 11 *Chelsea Embankment*; *Lexden Park*, Colchester; and *Athenæum Club*, S.W.
- 1896 Gray, Andrew, M.A. LL.D. (Glasg.) F.R.S.E. Professor of Natural Philosophy in the University of Glasgow. 11 *The University*, Glasgow.
- 1896 Green, Joseph Reynolds, M.A. Sc.D. (Camb.) B.Sc. (Lond.) F.L.S. Professor of Botany to the Pharmaceutical Society of Great Britain. *Downing College*, Cambridge.
- 1888 Greenhill, Alfred George, M.A. Professor of Mathematics in the 1896-97
Ordnance College, Woolwich; Officier d'Académie, Paris; For.
Mem. R. Accad. dei Lincei. 1 *Staple Inn*, W.C.
- 1878 Greenwell, Rev. William, M.A. D.C.L. Canon of Durham, F.S.A.
Durham.
- 1901 Gregory John Walter, D.Sc. F.G.S. Professor of Geology in the
University of Glasgow. *The University*, Glasgow.
- 1895 Griffiths, Ernest Howard, M.A. Principal and Professor of Physics,
University College of South Wales and Monmouthshire; Fellow
of Sidney Sussex College, Cambridge. *University College*, Cardiff.
- 1888 Groves, Charles Edward, F.C.S. F.I.C. 352 *Kennington Road*, S.E.
- 1888 Grubb, Sir Howard, F.R.A.S. *Rockdale*, *Orwell Road*, *Rathgar*,
Dublin.
- 1867 Günther, Albert C. L. G., M.A. M.D. Ph.D. F.L.S. F.Z.S. late 1874-76
Keeper of the Zoological Department in the British Museum,
Soc. Reg. Scient. Upsal; Soc. Phys.-Med. ad Rhenum infer., Soc. 1875-76
Zool.-Bot. Vindob. Socius ord.; Reg. Acad. Panormit. Scient.,
Soc. Asiat. Bengal., Instit. Nov. Zel., Soc. Linn. Nov. Gall., Soc.
Nat. Scrutat. Basil., Soc. Zool. Gall., Soc. Lit. et Phil. Liverpool,
Soc. Roman. Zoolog. Socius Honor.; Imp. Acad. Scient. Petropol.,
Reg. Acad. Scient. Taurin., Reg. Acad. Scient. Suec., Soc. Senckenb.
Nat. Scrutat. Francof. Acad. Scient. nat. Philad., Acad. Scient.
nat. Californ., Soc. Scient. nat. Cherbourg, Soc. Human. et Scient.
Gall. Merid. Orient. Socius extran. Medal: Royal. *Lichfield
Road*, *Kew Gardens*, Surrey.
- 1899 Haddon, Alfred Cort, M.A. Sc.D. M.R.I.A. University Lecturer in
Ethnology, Cambridge. *Imisfail*, *Hills Road*, Cambridge.
- 1897 Haldane, John Scott, M.A. M.D. M.R.C.P. (Edin.) Lecturer in
Physiology in the University of Oxford. 4 *St. Margaret's Road*,
Oxford.
- 1891 Halliburton, William Dobinson, M.D. B.Sc. F.R.C.P. Professor of 1898-1900
Physiology in King's College, London. *Church Cottage*, 17 *Mary-
lebone Road*, N.W.

Date of Election	Service on Council, &c.
1887	Halsbury, Right Hon. Hardinge Stanley Giffard, Earl of, M.A. D.C.L. High Steward of the University of Oxford. <i>4 Ennismore Gardens, W.</i>
1863	Harcourt, Augustus George Vernon, M.A. (Oxon.) D.C.L. (Dunelm.) LL.D. (Univ. McGill) V.P.C.S. Late Lee's Reader in Chemistry at Christ Church. <i>St. Clare, Ryde, Isle of Wight; and Athenæum Club, S.W.</i> 1878-80
1902	Hardy, William Bate, M.A. Fellow and Tutor of Gonville and Caius College. <i>Newnham Lea, Grange Road, Cambridge.</i>
1902	Harker, Alfred, M.A. Lecturer in Petrology, University of Cambridge. <i>St. John's College, Cambridge.</i>
1863	Harley, Rev. Robert, M.A. (Oxon.) F.R.A.S. Lit. et Phil. Soc. Manc. et Soc. Reg. Queensl. Soc. Honor. <i>Rosslyn, Westbourne Road, Forest Hill, S.E.; and Athenæum Club, S.W.</i>
1898	Harmer, Sidney Frederic, Sc.D. Superintendent of the University Museum of Zoology, and Fellow of King's College, Cambridge. <i>King's College, Cambridge.</i>
1884	Hartley, Walter Noel, D.Sc. (Roy. Univ. Ireland), F.R.S.E. F.I.C. Hon. Fellow of King's College, London, Professor of Chemistry in the Royal College of Science for Ireland. <i>Royal College of Science, Stephen's Green, Dublin; and 36 Waterloo Road, Dublin.</i>
1897	Haswell, William, M.A. D.Sc. (Edin.) F.L.S. Corr. Mem. Roy. Soc. Tasman.; Mem. K. Leop. Carol. Deutsche Akad. Halle; Corr. Mem. Soc. Biol. Paris; Challis Professor of Zoology in the University of Sydney. <i>The University, Sydney, N.S.W.</i>
1864	Hay, Right Hon. Sir John Charles Dalrymple, Bart., Admiral, G.C.B. D.C.L. (Oxon.) LL.D. (Glas.) F.R.G.S. V.P. Inst. Naval Architects. <i>108 St. George's Square, S.W.; and Craigenveoch, Wigtownshire, N.B.</i>
1899	Head, Henry, M.A. M.D. F.R.C.P. M.R.C.S. 143 <i>Harley Street, W.</i>
1891	Heaviside, Oliver, Hon. Mem. Lit. Phil. Soc. Manchester; Amer. Acad. Arts and Sci. <i>Bradley View, Newton Abbot, Devon.</i>
1866	Hector, Sir James, K.C.M.G. Ord. Cr. Pruss. M.D. F.G.S. F.L.S. F.R.S.E. C.M.Z.S. Hon. Mem. of the Royal Societies of Victoria, New South Wales, South Australia, and Tasmania; For. Mem. Amer. Acad. Sci., Amer. Inst. Mining Engs., and K. Leop. Carol. Acad.; Director of the Geological Survey, Meteorological and Weather Departments, and of the New Zealand Institute; Chancellor of the New Zealand University. <i>Wellington, New Zealand.</i>
1899	Hele-Shaw, Henry Selby, LL.D. (St. Andr.) M. Inst. C.E. M. Inst. M.E. Principal of Transvaal Technical Institute, and Organizer of Technical Education in the Transvaal. Late Harrison Professor of Engineering in University College, Liverpool.
1889	Hemsley, William Botting, F.L.S. Hon. Memb. Nat. Hist. Soc. Mexico; Keeper of the Herbarium, Royal Gardens, Kew. <i>Royal Gardens, Kew.</i>
1875	Hennessey, John Baboneau Nickterlien, C.I.E. M.A. F.R.A.S. F.R.G.S. Late Deputy Surveyor-General in charge of the Trigonometrical

Date of
ElectionService on
Council, &c.

- Surveys, Survey of India. *Merrimu, 18 Alieyn Park, West Dulwich, S.E.; and Athenæum Club, S.W.*
- 1874 Henrici, Olaus Magnus Friedrich Erdmann, Ph.D. LL.D. (St. And.) 1882-83
Professor of Mechanics and Mathematics in the City and Guilds of London Institute. *Central Technical College, Exhibition Road, S.W.; and 34 Clarendon Road, Notting Hill, W.*
- 1892 Herdman, William Abbott, D.Sc. F.R.S.E. Pres. L.S. Professor of 1898-1900
Natural History in University College, Liverpool. *Croxteth Lodge, Ullet Road, Liverpool.*
- 1884 Herschel, Alexander Stewart, M.A. Hon. D.C.L. (Durham), F.R.A.S.
Honorary Professor of Physics and Experimental Philosophy in the Durham College of Science, Newcastle-on-Tyne. *Observatory House, Slough, Bucks.*
- 1871 Herschel, John, Col. R.E. F.R.A.S. Late Deputy Superintendent,
Great Trigonometrical Survey of India. *Observatory House, Slough, Bucks.*
- 1895 Heycock, Charles Thomas, M.A. Lecturer on Natural Science, King's
College, Cambridge. *24 Fitzwilliam Street, Cambridge.*
- 1885 Hicks, William Mitchinson, M.A. D.Sc. Late Fellow of St. John's 1900-2
College, Cambridge; Principal and Professor of Physics in University College, Sheffield. *Dunheved, Endcliffe Crescent, Sheffield.*
- 1895 Hickson, Sydney John, D.Sc (Lond.) M.A. (Camb.) Hon. M.A. (Oxon.) F.Z.S. Hon. Fellow of Downing College, Cambridge; Professor of Zoology in Owens College, Manchester; Hon. Mem. K. Inst. Taal-Land-en Volkenkunde Neder.-Indië. *Ellesmere House, Withington, Manchester.*
- 1903 Hiern, William Philip, M.A. (Camb.) F.L.S. *The Castle, Barnstaple, Devon.*
- 1900 Hill, Leonard, M.B. Lecturer on Physiology in the London Hospital
Medical College. *Osborne House, Loughton, Essex.*
- 1894 Hill, Micaiah J. M., M.A. Sc.D. Professor of Mathematics, Uni-
versity College, London. *18 Ferncroft Avenue, Hampstead, N.W.*
- 1896 Hinde, George Jennings, Ph.D. (Munich) F.G.S. *Ivythorn, 24 Avon-
dale Road, South Croydon.*
- 1898 Hobson, Ernest William, Sc.D. Fellow of Christ's College, Cam- 1903-
bridge. *The Gables, Mount Pleasant, Cambridge.*
- 1895 Holden, Henry Capel Loftt, Lieut.-Col. R.A. *2 St. John's Park,
Blackheath; and Royal Arsenal, Woolwich.*
- 1904 Holland, Thomas Henry, F.G.S. Director of the Geological Survey of
India. *Geological Survey Office, Calcutta.*
- 1847 Hooker, Sir Joseph Dalton, G.C.S.I. C.B.—Past President—M.D. 1853-54
D.C.L. LL.D. F.L.S. F.G.S. F.R.G.S. Hon. Mem. Roy. Bot. Soc. 56-58
and Roy. Med. Chir. Soc., London; Bot. and Med. Socs., Edin.; 62-64
R.I.A., Dubl.; Nat. Hist. Soc. Newcastle; Camb. Philos. Soc.; 70-80
Asiat. Soc. Beng.; and New Zeal. Institute. Pruss. Ord. "Pour la 84-86
Mérite;" Member of Acad. Sci., Paris; Acad. Imp. Sci.,
St. Petersb.; K. Akad. der Wissensch, K. K. Geogr. Gesell., and
Hort. Soc. of Vienna; K. Akad. der Wissensch., Berlin; Accad.

Date of
Election

Service on
Council, &c.

- delle Sci. dell' Istit. Bologna; Acad. Roy. des Sci. Brussels; Reale Accad. dei Georgofli, Florence; Kong. Dansk. Vidensk. Selsk. Copenh.; K. Gesell. der Wiss. Gött.; K. Danske Vidensk. Selskab. Stockholm; K. Vetensk. Soc., Upsala; K. Phys.-oekonom. Gesell. Königsb.; Soc. Vellosiana Rio de Janeiro; K. Leopold.-Carol. Deut. Akad. der Naturf., Halle; Senck. Naturf. Gesell. Frankf. a M.; K. Baier. Bot. Gesell., Ratisbon; R. Accad. dei Lincei, Rome; Amer. Acad. of Sci., Boston. Corresp. Mem. of Dubl. Nat. Hist. Soc. and Agricult. Soc. of Paris. For. Mem. of Acad. de Méd., Paris, and Nat. Acad. of Sci., Washington. **Medals:** Copley, Royal, Darwin. *The Camp, Sunningdale, Berkshire.*
- 1900 Horne, John, LL.D. (Aberd.) F.R.S.E. F.G.S. *Geological Survey Office, Sheriff Court Buildings, Edinburgh; and 12 Keith Crescent, Blackhall, Midlothian.*
- 1886 Horsley, Sir Victor Alexander Haden, B.S. F.R.C.S. M.D. (Halle), late 1898-99
Professor of Pathology in University College, London. **Medal:** Royal. *25 Cavendish Square, W.; and Athenæum Club, S.W.*
- 1902 Hough, Sydney Samuel. Chief Assistant in the Royal Observatory, Cape of Good Hope. *Royal Observatory, Cape Town.*
- 1897 Howes, George Bond, LL.D. (St. Andr.) D.Sc. (Vict.) F.L.S. Vice-Pres. Z.S. Professor of Zoology in the Royal College of Science, London. *Ingladene, Barrowgate Road, Chiswick, W.*
- 1893 Howorth, Sir Henry Hoyle, K.C.I.E. D.C.L. 30 *Collingham Place, Cromwell Road, S.W.*
- 1884 Hudleston, Wilfrid H., M.A. F.G.S. F.C.S. 8 *Stanhope Gardens, South Kensington, S.W.*
- 1865 Huggins, Sir William, K.C.B. O.M.—President—D.C.L. (Oxon.) 1866-68
LL.D. (Cantab. Edin. Dubl. et St. And.) D.Sc. (Vict.) Ph.D. 69-71
(Lugd. Bat.) Hon. Ph. Nat. D. (Heidelberg) Hon. F.R.S.E. 80-82
F.R.A.S. Ord. Imp. Bras. Rosæ; Comm. Inst. Fr. (Acad. Sci.), 88-89
Acad. Reg. Sci. Berol., Soc. Reg. Sci. Gött. et Soc. Spettros. 95-97
Ital. Mem. Corr.; Acad. Lync. Romæ Soc.; Acad. Sci. Reg. 1900-
Boruss., Soc. Phil. Amer. Philad., Acad. Amer. Art. et Sci. V.P.
Boston, Acad. Nat. Sci. Washington, Reg. Sci. Hafn., Physiogr. 1870-71
Lund, Reg. Boie. Marob. Acad. Reg. Sci., Acad. Reg. Hib., Soc. 95-97
Reg. Dubl., Lit. Phil. Manc., Soc. Astr. de France, Soc. Astr. et Pres.
Phys. Toronto, Soc. Hist. Dallas et Soc. Reg. Nov. Camb. Austr. 1900-
Soc. Photo. Reg. Lond. Soc. Honor.; Russ. Ast. Soc., Ast. Soc. Mex. et Soc. Nat. Cherbourg, Soc. Phil. Reg. Glasc., Soc. Phys. Roterod., Soc. Holl. Sci. Harl., For. Mem. **Medals:** Copley, Rumford, Royal. *90 Upper Tulse Hill; and Athenæum Club, S.W.*
- 1889 Hughes, Thomas McKenny, M.A. Trin. Coll. Camb. F.G.S. F.S.A. Professorial Fellow of Clare College, Camb.; Chev. Ord. SS^{rum}. Maur. et Lazar. Ital.; Corresp. Memb. Soc. Géol. de Belg. and Soc. Géol. de Fr.; Woodwardian Professor of Geology in the University of Cambridge. *Ravensworth, Brooklands Avenue, Cambridge.*

Date of
ElectionService on
Council, &c.

- 1867 Hull, Edward, M.A. LL.D. (Glasg.) F.G.S. late Director of the Geological Survey of Ireland, and Professor of Geology in the Royal College of Science; Master in Engineering (Hon. Caus. Dubl.); Hon. Mem. Acad. Sci. Amer. Philad., Soc. Géol. Belg., Geol. Soc. Edin., Glasg., Manch. 14 *Stanley Gardens, Notting Hill, W.*
- 1862 Hutchinson, Jonathan, LL.D. (Glasg. and Camb.) M.D. (Dubl.) F.R.C.S. Hon. D.Sc. (Oxon.) Corr. Mem. Soc. Chir. Paris; Hon. Mem. Soc. Dermat. Nov. Ebor. Formerly President of and Professor of Pathology and Surgery in the Royal College of Surgeons. 15 *Cavendish Square, W.*
- 1892 Hutton, Frederick Wollaston, Captain. F.G.S. C.M.Z.S. Curator of the Canterbury Museum, Christchurch; Cor. Mem. Roy. Soc. Tas.; Hon. Mem. Roy. Soc. N.S.W. Corresp. du Mus. d'Hist. Nat. Paris, Acad. Nat. Sci. Philad., Ornith. Ver. Wien, and K. K. Geol. Reichsanst. Wien. *Canterbury Museum, Christchurch, New Zealand.*
- 1901 Jackson, Henry Bradwardine, Captain R.N. Controller of the Navy. 314 *Minster House, St. James' Court, Buckingham Gate, S.W.*
- 1878 Jackson, John Hughlings, M.D. Coll. Reg. Med. Soc., Consulting Physician to the London Hospital. 3 *Manchester Square, W.*
- 1885 Japp, Francis Robert, M.A. LL.D. (St. And.) F.I.C. F.C.S. Professor of Chemistry in the University of Aberdeen. *University, Aberdeen.*
- 1894 Jarvis-Smith, Rev. Frederick John, M.A. (Oxon.) University Lecturer in Mechanics, and Millard Lecturer in Experimental Mechanics, Trinity College, Oxford. *Millard Laboratory, 3 St. Giles, Oxford.*
- 1904 Joly, Charles Jasper, F.R.A.S. Royal Astronomer of Ireland; Andrews Professor of Astronomy in the University of Dublin. *Observatory, Dunsink, Co. Dublin.*
- 1892 Joly, John, M.A. D.Sc. F.G.S. Professor of Geology and Mineralogy in the University of Dublin. *Somerset, Temple Road, Rathmines, Dublin.*
- 1872 Jones, Thomas Rupert, F.G.S. Hon. Mem. Gesell. Isis, Dresden, Soc. Belg. de Microsc., Soc. Géol. Hydrol. Palæontol. Brux., Geol. Assoc. Lond., Geol. Soc. Glasg., Roy. Irish Geol. Soc., and Anthropol. Inst. Lond.; Corresp. of the K.-K. Geolog. Reichsanst. Wien, Acad. Nat. Sci. Philad., Roy. Malacol. Soc. Belg., and Geol. Soc. Edin. 17 *Parson's Green, Fulham, S.W.*
- 1877 Judd, John Wesley, C.B. LL.D. F.G.S. Professor of Geology in the Royal College of Science, London, and Dean of the College; Soc. Phil. Ebor., Sci. Nat. Deva., Soc. Reg. Sydney, Soc. Asiat. Beng., Soc. Géol. du Nord, France, Soc. Belg. de Géol. de Pal. et d'Hydrol., Soc. Honor.; Acad. Sci. Nat. Philad., Soc. Géol. Belg. Brux., Inst. Imp. Geol. Vindob. Corresp. 22 *Cumberland Road, Kew; Royal College of Science, South Kensington; and Athenæum Club, S.W.*

1887-89
1902-04
V.P.
1902-04

Date of Election		Service on Council, &c.
1861	<p>Kelvin, Right Hon. William Thomson, Lord, O.M.—Past President— Chancellor of the University of Glasgow. G.C.V.O. D.C.L. (Oxon.) LL.D. (Camb. Dubl. Edin. Glasg. Princeton, Toronto) F.R.S.E. Hon. Mem. Inst. C.E., and Elect. Eng., late Professor of Natural Philosophy in the University of Glasgow, and Fellow of St. Peter's College, Cambridge; Grand Officer of the Legion of Honour of France. Ord. of First Class of the Sacred Treasure of Japan; Knt. Pruss. Ord. "<i>Pour le Mérite</i>"; Comm. Ord. of Leopold, Belgium; Comm. Imp. Ord. of the Rose, Brazil; Assoc. Étrang. Inst. Fr. (Acad. Sci.) Paris; Corresp. Mem. R. Ist. Lomb. Milan, R. Acad. dei Lincei, Rome; For. Mem. Königl. Preuss. Akad. Berl., Königl. Gesell. Wiss. Gött., Soc. Ital. di Scienze, Milan, Soc. Reale di Napoli, Kongl. Svenska Vetenskaps Akad. Stookholm, Acad. Nat. Sci. Philad.; Hon. Mem. Acad. Imp. Sci. Vienna, Acad. Nov. Lync. Rom., United Service Inst. Lond., Lit. and Phil. Soc. Manch., Phil. Soc. Glasg., Roy. Irish Acad., Asiat. Soc. Bengal. Medals: Copley, Royal. Netherhall, Largs, Ayrshire; 15 Eaton Place, S.W., and Athenæum Club, S.W.</p>	<p>1890-96 Pres. 1890-96</p>
1861	<p>Kempe, Alfred Bray, M.A.—Treasurer and Vice-President— <i>2 Paper Buildings, Temple, E.C.; and 19 Pembridge Square, W.</i></p>	<p>1897- Treas. 1896- 1895-96</p>
1867	<p>Kennedy, Alexander B. W., LL.D. Mem. Inst. C.E. Past Pres. Inst. M.E., Emeritus Professor of Engineering and Mechanical Technology in University College, London. <i>1 Queen Anne Street, Cavendish Square, W.</i></p>	
1890	<p>Kerr, Rev. John, LL.D. Mathematical Lecturer in the Free Church Training College, Glasgow. Medal: Royal. <i>31 Lacrosse Terrace, Hillhead, Glasgow.</i></p>	
1902	<p>Kidston, Robert, F.R.S.E. <i>12 Clarendon Place, Stirling, N.B.</i></p>	
1867	<p>King, Sir George, K.C.I.E. M.B. LL.D. F.L.S. Late Director of the Botanical Survey of India, Superintendent of the Royal Botanical Gardens, Calcutta, and of the Government Cinchona Plantations, Darjeeling. <i>Athenæum Club; and c/o Messrs. Grindlay and Co., 54 Parliament Street, S.W.</i></p> <p>Kingsburgh (<i>see Macdonald, J. H. A.</i>).</p>	
1897	<p>Kipping, F. Stanley. D.Sc. (Lond.) Ph.D. (Munich). Professor of Chemistry, University College, Nottingham. <i>University College, Nottingham.</i></p>	
1867	<p>Kirk, Sir John, G.C.M.G. K.C.B. M.D. LL.D. D.C.L. (Oxon.) D.Sc. (Camb.) F.L.S. F.R.G.S. <i>Wavertree, Sevenoaks, Kent; and Athenæum Club, S.W.</i></p>	<p>1898-95 V.P 1894-95</p>
1875	<p>Klein, Edward Emanuel, M.D. Late Lecturer on General Anatomy and Physiology in the Medical School, St. Bartholomew's Hospital. <i>Harewood, Riverdale Gardens, Twickenham Park.</i></p>	<p>1888-90</p>
1864	<p>Lamb, Horace, M.A. (Cantab.) D.Sc. (Oxon.) LL.D. (Glasg.) Professor of Mathematics in the Owens College, Manchester. Medal: Royal. <i>6 Wilbraham Road, Fallowfield, Manchester.</i></p>	<p>1894-9</p>

Date of Election		Service on Council, &c.
1863	Langley, John Newport —Vice-President—M.A. D.Sc. (Camb.) Hon. LL.D. (St. Andrews). Professor of Physiology in the University of Cambridge; Fellow of Trinity College; Corr. Mem. Soc. de Biol., Paris, and Royal Military Acad. of Med., St. Petersburg; Hon. Mem. Soc. Aliéniste et Neurol. Univ. Imp. Kazan. Corr. Mem. K. K. Gesell. d. Aerzte, Vienna. Medal: Royal. Hedgerley Lodge, Madingley Road, Cambridge; and Athenæum Club, S.W.	1897-98 1904-
1875	Lankester, Edwin Ray, M.A. (Oxon.) LL.D. (St. And.) Director of the Natural History Departments, British Museum; late Fullerian Professor of Physiology in the Royal Institution; Honorary Fellow of Exeter College, Oxford; Corr. Inst. Fr. (Acad. Sci.); Hon. Mem. Camb. Phil. Soc., Roy. Phys. Soc. Edin., Soc. de Biol. Paris, and New York Acad. Sci.; Corr. Mem. Acad. Imp. Sci. St. Petersburg; Corr. Acad. Nat. Sci. Philadelphia; For. Mem. B. Acad. dei Lincei; Böhm. Gesell. Wiss.; Assoc. Roy. Acad. Belg.; Corr. Mem. Roy. Soc. Sci. Gött. Medal: Royal. British Museum (Natural History), Cromwell Road, S.W.; and Athenæum Club, S.W.	1882-83 88-90 94-96 V.P. 1896-98 82-83
1888	Lapworth, Charles, LL.D. (Aberd.), F.G.S. Professor of Geology in the University of Birmingham. Medal: Royal. 48 Frederick Road, Edgbaston, Birmingham.	1895-97
1892	Larmor, Joseph —Secretary—M.A. D.Sc. (Lond., Dub., Oxon.) LL.D. (Glasg.) D.C.L. (Durh.) F.R.A.S., Hon. Mem. Amer. Acad. Arts and Sci., Lit. and Phil. Soc., Manc. Lucasian Professor of Mathematics in the University of Cambridge. Fellow of St. John's College, Cambridge; Past. Pres. Camb. Phil. Soc.; formerly Professor of Natural Philosophy in Queen's College, Galway, and Fellow of the Royal University of Ireland. <i>St. John's College, Cambridge.</i>	1897-99 1901- Sec. 1901-
1890	Lep, Arthur Sheridan, M.A. Sc.D. Fellow, and formerly Lecturer in Physiology, and Tutor of Gonville and Caius College, sometime Assistant Lecturer of Trinity College, and University Lecturer, Cambridge. <i>Sunnyside, Sidcup, Kent.</i>	
1899	Lefevre, Right Hon. George John Shaw, M.A. 18 <i>Bryanston Square, W., and Abbotsworthy House, Kingsworthy, Winchester.</i>	
1898	Lindley, Right Hon. Nathaniel, Lord. 19 <i>Craven Hill Gardens, W., Athenæum Club, S.W.; and The Lodge, East Carlton, Norwich.</i>	
1898	Lister, Arthur, F.L.S. <i>Leytonstone, Essex.</i>	
1860	Lister, Right Hon. Joseph, Lord, O.M. —Past President—B.A. and M.B. (Lond.) F.R.C.S. D.C.L. (Oxon.) Hon. M.D. (Dubl. Würzburg, Bologna, Buda Pest, Vienna) LL.D. (Camb. Edin. Glasg. Toronto and Univ. McGill) D.Sc. (Vict.) Emeritus Professor of Clinical Surgery, King's College, London, Serjeant-Surgeon in Ordinary to the King. Knt. Grand Cross Ord. Danebrog; Knt. Pruss. Ord. "Pour le Mérite"; Assoc. Étrang. Inst. Fr. (Acad. Sci.); Hon. Mem. R.I.A.; Hon. Mem. Asiat. Soc. Bengal, Amer. Acad. Arts and Sci., and Acad. Imp. Milit. de Méd., St. Petersburg. Medals: Copley, Royal. 12 Park Crescent, Portland Place, W.	1881-83 1893-1901 1902-03 For. Sec. 1893-95 Pres. 1895-1900 V.P. 1900-01
1900	Lister, Joseph Jackson, M.A. F.Z.S. <i>St. John's College, Cambridge.</i>	

Fellows of the Royal Society.

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Date of Election		Service on Council, &c.
1879	Liveing, George Downing M.A. Sc.D. (Dubl.) Professor of Chemistry in the University of Cambridge; Fellow of St. John's College, Cambridge. Medal: Davy. Newnham, Cambridge.	1891-92 1902-04 V.P.
1882	Liversidge, Archibald, M.A. (Camb.) LL.D. (Glasg.) Assoc. R.S.M.; Hon. F.R.S.E. F.C.S. F.I.C. F.G.S. F.R.G.S., Memb. Phil. Soc. Camb., Phys. Soc. Lond., Min. Soc. Gr. Brit., Min. Soc. Fr.; Hon. Mem. Roy. Soc. Viot., New Zeal. Inst., Roy. Histor. Soc., K. Leop. Carol. Acad. Halle; Corr. Mem. New York Acad. Sci., Senck. Naturf. Gesell. Frankf., Roy. Soc. Tasm., Roy. Soc. Queensland, Soc. d'Acclimat. Maur., Edin. Geol. Soc. Professor of Chemistry in the University of Sydney. <i>St. Mark's Road, Darling Point, Sydney, New South Wales.</i>	1891-92 1903-04
1869	Lockyer, Sir J. Norman, K.C.B. LL.D. (Glasg.) Sc.D. (Camb.) Hon. Mem. Phys. Soc. Lond., Ord. Imp. Bras. Rosse. Eq. Inst. Fr. (Acad. Sci.), Soc. pro fov. Indust. Nat. Par., Soc. Reg. Sci. Gött., Frank. Inst. Philad., Soc. Phys., Soc. Reg. Med. Brux., Soc. Spettros. Ital., Reg. Sci. Panorm., Bataaf. Genoots. Roterod. et Hist. Nat. Genev. Mem. Corr.; Acad. Reg. Linc. Romæ. et Soc. Phil. Amer. Philad. Socius.; Soc. Lit. et Phil. Manc., Acad. Gioen. Sci. Nat. Catan., Soc. Phil. Ebor. Acad. Sci. New York, Soc. Astron. Mexico, et Univ. Lehigh Soc. Honor. Medal: Rumford. 16 <i>Penyvern Road, S.W.</i> ; and <i>Solar Physics Observatory, South Kensington, S.W.</i>	1874-76 1885-87 1891-93 V.P. 1892-93
1887	Lodge, Sir Oliver Joseph. D.Sc. (Oxon. Lond.) LL.D. (Glasg. St. And.) M. Inst. E.E. Principal of the University of Birmingham; Corr. Mem. Amer. Phil. Soc. Philad., Aacad. Sci. dell' Istituto Bologna, Bataafsch Genoots. Rotterdam. Medal: Rumford. <i>Mariemont, Edgbaston, Birmingham.</i>	1893-94
1902	Long, Right Hon. Walter Hume. 11 <i>Ennismore Gardens, S.W.</i>	
1894	Love, Augustus Edward Hough, M.A. D.Sc. Sedleian Professor of Natural Philosophy in the University of Oxford. 34 <i>St. Margaret's Road, Oxford.</i>	1902-4
1894	Lydekker, Richard, B.A. (Camb.). <i>The Lodge, Harpenden, Herts.</i>	
1881	Macalister, Alexander, M.A. M.D. (Dubl. & Camb.) Sc.D. (Dubl.) LL.D. (Glasg. and Univ. McGill) Professor of Anatomy in the University of Cambridge. <i>Torrisdale, Cambridge.</i>	1894-95
1866	McClintock, Sir Francis Leopold, Admiral, K.C.B. D.C.L. LL.D. 16 <i>Queensberry Place, Cromwell Road, S.W.</i>	
1901	Macdonald, Hector Munro, M.A. Professor of Mathematics in the University of Aberdeen. <i>University, Aberdeen.</i>	
1859	Macdonald, Sir John Denis, K.C.B. M.D. Inspector-General of Hospitals and Fleets R.N. <i>Amwell Place, Hassocks, Sussex.</i>	
1888	Macdonald, Right Hon. Sir John Hay Athole, K.C.B. LL.D. F.R.S.E. M.I.E.E. Lord Justice-Clerk of Scotland, and Lord President of the Second Division of the Court of Session. 15 <i>Abercromby Place, Edinburgh.</i>	

Date of Election		Service on Council, &c.
1895	Macewen, Sir William, M.D. (Glasg.) Hon. LL.D. (Glasg.) Hon. D.Sc. (Oxon) Hon. F.R.C.S. Regius Professor of Surgery in the University of Glasgow. 3 <i>Woodside Crescent, Glasgow.</i>	
1900	MacGregor, James Gordon, D.Sc. (Lond.) LL.D. (Glasg. and Dalh.) Professor of Natural Philosophy in the University of Edinburgh. <i>The University, Edinburgh.</i>	
1877	M ^c Intosh, William Carmichael, M.D. (Edin.) LL.D. (St. And.) F.L.S. F.R.S.E. L.R.C.S.E. C.M.Z.S. Professor of Natural History in the University of St. Andrews; Director of the University Museum, and of the Gatty Marine Laboratory, St. Andrews; V.P. Lit. and Antiq. Soc. Perth; Hon. Mem. Roy. Zool. Soc. Ireland, and Nat. Hist. Soc. Glasgow; Hon. Fell. Scot. Nat. Hist. Soc.; Hon. Mem. Psychol. Soc. Paris, and Soc. Centrale d'Aquicult. de France. Medal: Royal. 2 <i>Abbotsford Crescent, St. Andrews, Scotland; and Nevay Park, Meigle, Perthshire.</i>	1900-01
1884	M ^c Kendrick, John Gray, M.D. LL.D. F.R.S.E. F.R.C.P.E. Professor of Physiology in the University of Glasgow. <i>University, Glasgow.</i>	1892-98
1881	M ^c Leod, Herbert, F.I.C. F.C.S. Late Professor of Chemistry in the Royal Indian Engineering College, Cooper's Hill. 9 <i>Coverdale, Richmond, Surrey.</i>	1887-89
1890	MacMahon, Percy Alexander, Major, R.A. (retired) D.Sc. (Dubl.) Sc.D. (Camb.), F.R.A.S. Hon. Mem. C.P.S. Medal: Royal. <i>Queen Anne's Mansions, Westminster, S.W.</i>	1895-97
1877	Mallet, John William, Ph.D. (Gött.) M.D. LL.D. F.C.S. Mem. of the Chem. Socs. of Paris, Berlin, and New York, and of the Amer. Phil. Soc. Philad.; Assoc. Fellow of the Amer. Acad. of Arts and Sciences, Boston; Fellow of the Coll. Phys. Philad. and Hon. Fellow of the Med. Chir. Faculty of Maryland. <i>University of Virginia, Albemarle Co., Virginia, United States.</i>	
1903	Mallock, Henry Reginald Arnulph. 3 <i>Victoria Street, S.W.</i>	
1901	Mansergh, James, Past Pres. Inst. C.E. 51 <i>Fitzjohn's Avenue, N.W.</i>	
1900	Manson, Sir Patrick, K.C.M.G. M.D. (Aberd.) LL.D. (Aberd.) F.R.C.P. Hon. D.Sc. (Oxon.) Physician and Medical Adviser to the Colonial Office; Lecturer on Tropical Medicine to St. George's Hospital, Charing Cross Hospital, and London School of Tropical Medicine. 21 <i>Queen Anne Street, Cavendish Square, W.</i>	
1873	Markham, Sir Clements Robert, K.C.B. P.R.G.S. F.S.A. Acad. Caes. Nat. Cur. Socius; Soc. Geog. Par., Berol., Vindob., Hist. Philad. et Univ. Chil. Soc. Honor. <i>Athenæum Club; and 21 Eccleston Square, S.W.</i>	
1891	Marr, John Edward, M.A. Sc.D. (Camb.), Pres. G.S. Fellow and Lecturer of St. John's College, Cambridge, and University Lecturer in Geology. <i>St. John's College, Cambridge.</i>	1904-
1904	Marshall, Hugh, D.Sc. (Edin.) F.R.S.E. F.C.S. Lecturer on Chemistry and on Mineralogy and Crystallography in the University of Edinburgh. 12 <i>Lonsdale Terrace, Edinburgh.</i>	
1901	Martin, Charles James, M.D. D.Sc. (Lond.) Director of the Lister Institute; late Professor of Physiology in the University of Melbourne. <i>Lister Institute of Preventive Medicine, Chelsea Bridge Road, S.W.</i>	

Date of
Election

Service on
Council, &c.

- 1895 Martin, Sidney, M.D. B.S. B.Sc. F.R.C.P. Physician to University College Hospital; Professor of Pathology, University College, London. 10 *Mansfield Street, Cavendish Square, W.*
- 1870 Maskelyne, Nevil Story, M.A. F.G.S. Late Professor of Mineralogy in the University of Oxford; Hon. Fellow Wadham Coll. Oxon; Soc. Reg. Geol. Cornub., Soc. Imp. Min. Petrop. et Soc. Hist. Nat. Bost. Soc.; Acad. Reg. Bavar. Monach. Soc. Cor. *Basset Down House, Swindon.* 1873-75
97-99
V.P.
1897-99
- 1903 Masson, David Orme, M.A. D.Sc. (Edin.). Professor of Chemistry, University of Melbourne. *University of Melbourne, Victoria, Australia.*
- 1870 Masters, Maxwell Tylden, M.D. M.R.C.S. F.L.S. Ord. Leopold Officier; Inst. Fr. (Acad. Sci.), Acad. Sci. Nat. Philad., Soc. Reg. Liège et Soc. Sci. Nat. Cherbourg Soc. Corr. *Mount Avenue, Ealing, W.*
- 1902 Mather, Thomas. *Rothsay, Ajax Road, West Hampstead.*
- 1897 Mathews, George Ballard, M.A. University Lecturer in Mathematics, Cambridge. Fellow of University College, London. Late Professor of Mathematics in the University College of North Wales. *St. John's College, Cambridge.*
- 1879 Matthey, George, F.C.S. Assoc. Inst. C.E. Lég. Honor. (France), Ord. Franz Josef (Austria), Great Gold Medal for Arts and Science (Germany). *Cheyne House, Chelsea Embankment, S.W.*
- 1898 Maxwell, Right Hon. Sir Herbert Eustace, Bart. LL.D. F.S.A. Pres. Soc. Scott. Antiq. 49 *Lennox Gardens, S.W.*; and *Monreith, Whauphill, Wigtownshire, N.B.*
- 1877 Medlicott, Henry Benedict, M.A. (Dubl.) F.G.S. Late Director (1876-87) of the Geol. Survey of India. 43 *St. John's Road, Clifton, Bristol.*
- 1886 Meldola, Raphael, V.P.C.S. F.I.C. F.R.A.S. F.E.S. Professor of Chemistry in the Finsbury Technical College, City and Guilds of London Institute. 6 *Brunswick Square, W.C.* 1896-98
- 1904 Meyrick, Edward, B.A. (Camb.) F.Z.S. *Thornhanger, Marlborough, Wilts.*
- 1892 Miall, Louis Compton, Professor of Biology in the Yorkshire College, Leeds. 1 *Richmond Mount, Headingley, Leeds.*
- 1902 Michell, John Henry, M.A. Assistant Professor of Mathematics in the University of Melbourne. *The University, Melbourne.*
- 1896 Miers, Henry Alexander, D.Sc. M.A. (Oxon.) F.G.S. V.P.C.S. V.P. Min. Soc. Waynflete Professor of Mineralogy in the University of Oxford. *Magdalen College, Oxford.* 1901-08
- 1874 Mills, Edmund James, Hon. LL.D. (Glasg.) D.Sc. Lond. F.C.S. F.I.C. Corr. Mem. Roy. Phil. Soc. Glasg. Emeritus Professor of Technical Chemistry in the Glasgow and West of Scotland Technical College, Glasgow. 64 *Twyford Avenue, West Acton, W.*
- 1887 Milne, John, F.G.S. Assoc. and Hon. Fellow of King's College, London, Late Professor of Mining and Geology in the Imperial College of Engineering, Japan. *Shide Hill House, Shide, Newport, Isle of Wight.*
- 1895 Minchin, George M., M.A. (Dubl.). Professor of Mathematics in the Royal Indian Engineering College, Cooper's Hill. *The College, Cooper's Hill, Staines.*

Date of Election		Service on Council, &c.
1871	Moncrieff, Sir Alexander, Colonel (late R.A.), K.C.B. <i>Bandirran, Perthshire, N.B.</i> ; 15 <i>Vicarage Gate, Kensington, W.</i> ; and <i>Athenæum Club, S.W.</i>	
1891	Mond, Ludwig, Ph.D. F.I.C. F.C.S. <i>The Poplars, 20 Avenue Road, Regent's Park, N.W.</i> ; <i>Athenæum Club, S.W.</i> ; and <i>Winnington Hall, Northwich.</i>	1900-01
1899	Morgan, Conwy Lloyd, LL.D. A.E.S.M. F.G.S. Principal and Professor of Psychology in University College, Bristol. <i>Corr. Acad. Sci. New York and Philad. Clayton House, Clifton Park, Bristol.</i>	
1892	Morley, Right Hon. John, O.M. M.A. D.C.L. (Oxon.) Hon. LL.D. (Camb. and Glasg.) Trust. Brit. Mus. <i>Flowermead, Wimbledon Park</i> ; and <i>Athenæum Club, S.W.</i>	
1896	Mott, Frederick Walker, M.D. (Lond.) F.B.C.P. <i>Pathological Laboratory, Claybury Asylum, Essex</i> ; and 25 <i>Nottingham Place, W.</i>	
1880	Moulton, John Fletcher, M.A. K.C. 57 <i>Onslow Square, S.W.</i>	
1900	Muir, Thomas, C.M.G. M.A. LL.D. F.R.S.E. Superintendent-General of Education in Cape Colony. <i>Department of Public Education, Cape Town, South Africa.</i>	
1904	Muirhead, Alexander, D.Sc. (Lond.). <i>The Lodge, Shortlands, Kent.</i>	
1866	Müller, Hugo, Ph.D. LL.D. (St. And.) V.P.C.S. Ord. SS ^{rum} Lazar. et Maurit. Eq. 13 <i>Park Square East, N.W.</i> ; <i>Crosby Hill, Camberley, Surrey</i> ; and <i>Athenæum Club, S.W.</i>	1883-85 89-91
1897	Murray, George Robert Milne, F.L.S. F.R.S.E. <i>Corr. Mem. New York Acad. Sci., Keeper of the Botanical Department, British Museum. Natural History Museum, Cromwell Road, S.W.</i> ; 8 <i>Kerrison Road, Ealing, W.</i> ; and <i>Dial Cottage, Stonehaven, N.B.</i>	
1896	Murray, Sir John, K.C.B. Knt. Pruss. Ord. "Pour le Mérite"; LL.D. (Edin. and Toronto); Sc.D. (Camb.); Ph.D. (Jena); F.L.S. F.B.G.S. F.R.S.E. P.R.S.G.S. P.S.N.H.S. F.B.P.S.E. F.S. Micros. S. F.S. Met. S. F.S.A. Scot.; Hon. Memb. Geo. für Erdk. Berlin, Ges. Naturf. Freunde Berlin, Schweiz. Naturf. Ges., Senckenburg Naturf. Ges., Nat. Geogr. Soc. Washington, Lit. and Phil. Soc. Manch., Konink. Nederl. Aardrijkskundig. Genoots. Amsterdam, Nederl. Dierkundige Vereenig., Imp. Soc. Students of Nat. Hist. Anthrop. and Ethnog. Moscow, Soc. Zool. France, Geol. Soc. Edin., Nat. Hist. Soc. Glasgow, Geogr. Ges. Bern. Soc., Geog. Ital. Rome; Corresp. Memb. Boston Soc. Nat. Hist., Russ. Imp. Acad. Sci., Russ. Imp. Soc. Geogr., Zool. Soc. London; For. Corresp. Memb. Soc. Géog. Paris; For. Hon. Memb. Amer. Acad. Arts and Sciences; Assoc. Acad. Roy. Sci. Lettres et Beaux-Arts, Belgique. Medal: Royal. <i>Challenger Lodge, Wardie, Edinburgh.</i>	
1875	Nares, Sir George Strong, K.C.B. Vice-Admiral, 11 <i>Claremont Road, Surbiton.</i>	
1897	Neville, Francis Henry, M.A. Fellow and Lecturer in Natural Science, Sidney College, Cambridge. <i>Sidney College, Cambridge</i> ; and 15 <i>Parkside, Cambridge.</i>	

<u>Date of Election</u>		<u>Service on Council, &c.</u>
1902	Newall, Hugh Frank, M.A. (Camb.) F.R.A.S. <i>Cambridge Observatory; and Madingley Rise, Cambridge.</i>	
1870	Newton, Alfred, M.A. F.L.S. F.Z.S. V.P. Marine Biol. Assoc. Professor of Zoology and Comparative Anatomy in the University of Cambridge. Medal: Royal. <i>Magdalene College, Cambridge.</i>	1879-81 89-91 V.P. 1889-91
1898	Newton, Edwin Tully, F.G.S. F.Z.S. Hon. Mem. Norfolk Nat. Soc. <i>Geological Museum, Jermyn Street, S.W.</i>	
1880	Niven, Charles, M.A. D.Sc. Professor of Natural Philosophy in the University, Aberdeen. 6 <i>Chanonry, Old Aberdeen.</i>	
1882	Niven, Sir William Davidson, K.C.B.— Vice-President —M.A. LL.D., late Director of Studies in Royal Naval College, Greenwich. <i>Rosedale, St. John's Road, Sidcup, Kent.</i>	1892-94 1904-
1870	Noble, Sir Andrew, Bart., Capt., K.C.B. D.C.L. (Dunelm.) F.R.A.S. F.C.S. Ord. Medjidie, Turkey, Grand Cordon, Ord. Coron. Ital. et Ord. Jes. Christ Portug. Ord. Imp. Bras. Rosae, Gr. Off. Ord. Thesau. Sacr. Japonia, Ord. Draco d. Sinen., Com. et. Ord. Car. III. Hisp. Eq. Medal: Royal. <i>Jesmond Dene House, Newcastle-upon-Tyne; and Athenæum Club, S.W.</i>	1884-85 89-90 1898-1900 V.P. 1899-00
1890	Norman, Rev. Alfred Merle, M.A. D.C.L. Hon. LL.D. (St. And.) F.L.S. Hon. Canon of Durham. <i>The Red House, Berkhamsted, Herts.</i>	
1900	North, Right Hon. Sir Ford. 76 <i>Queensborough Terrace, Hyde Park, W.; and Athenæum Club, S.W.</i>	
1900	Northumberland, Henry George Percy, Duke of, K.G. F.S.A. President of the Royal Institution. 2 <i>Grosvenor Place, S.W.</i>	
1904	Nuttall, George Henry Falkiner, M.A. (Camb.) M.D. (Cal.) Ph.D. (Gött.). University Lecturer in Bacteriology and Preventive Medicine, University of Cambridge. 3 <i>Cranmer Road, Cambridge.</i>	
1859	Odling, William, M.A. (Oxon.) M.B. (Lond.) Coll. Reg. Med. Socius. V.P.C.S. Hon. Math. Phys. Doct. (Lugd. Bat.) Waynflete Professor of Chemistry in the University of Oxford. <i>Museum; and 15 Norham Gardens, Oxford.</i>	1864-66 79-81
1863	Oliver, Daniel, LL.D. (Aberd.) F.L.S. Late Keeper of the Herbarium and Library, Royal Gardens, Kew; Emeritus Professor of Botany, University College, London. Medal: Royal. 10 <i>Kew Gardens Road, Kew.</i>	1875-76 80-82
1898	Osler, William, M.D. F.R.C.P. Hon. D.Sc. (Oxon.). Regius Professor of Medicine in the University of Oxford. <i>University Museum, Oxford.</i>	
1885	O'Sullivan, Cornelius, F.I.C. F.C.S. 148 <i>High Street, Burton-on-Trent.</i>	
1882	Palgrave, Robert Harry Inglis, F.S.S. <i>Belton near Great Yarmouth.</i>	
1898	Parsons, The Hon. Charles Algernon, C.B. M.A. Sc.D. M.Inst.C.E. Medal: Rumford. <i>Holey Hall, Wylam-on-Tyne.</i>	
1863	Pavy, Frederick William, M.D. (Lond.) LL.D. (Glasg.) Coll. Reg. Med. Socius. Consulting Physician and formerly Lecturer on Physiology and Comparative Anatomy and Zoology, and on Medicine, at Guy's Hospital. 35 <i>Grosvenor Street, W.</i>	

Date of Election		Service on Council, &c.
1892	Peach, Benjamin Neeve, F.R.S.E. F.G.S. <i>Geological Survey Office, Sheriff Court Buildings, Edinburgh.</i>	
1896	Pearson, Karl, M.A. LL.B. Professor of Applied Mathematics and Mechanics in University College, London. Medal: Darwin. <i>7 Well Road, Hampstead, N.W.</i>	
1892	Pedler, Alexander, C.I.E. F.C.S. F.I.C. Fellow of the University of Calcutta; Director of Public Instruction with the Government of Bengal. <i>Writers' Buildings, Calcutta.</i>	
1903	Perkin, Arthur George, F.C.S. <i>8 Montpelier Terrace, Hyde Park, Leeds.</i>	
1866	Perkin, William Henry, V.P.C.S. LL.D. (St. And.) Ph.D. Medals: Davy, Royal. <i>The Chestnuts, Sudbury, Harrow.</i>	1879-81 92-94 V.P. 1898-94
1900	Perkin, William Henry, junior, Ph.D. F.I.C. F.C.S. Professor of Organic Chemistry in Owens College, Manchester. Medal: Davy. <i>Fairview, Wilbraham Road, Fallowfield, Manchester.</i>	1904-
1885	Perry, John, D.Sc. LL.D. Professor of Mechanics and Mathematics in the Royal College of Science, London. <i>Royal College of Science, South Kensington, S.W.</i>	1904-
1902	Petrie, William Matthew Flinders, Hon. D.C.L. (Oxon.) Litt. D. (Camb.) LL.D. (Edin.) Professor of Egyptology, University College, London. <i>8 Well Road, Hampstead, N.W.</i>	
1868	Pettigrew, James Bell, M.D. and F.R.C.P. (Edin.) LL.D. (Glasg.) Chandos. Professor of Medicine and Anatomy, and late Dean of the Medical Faculty in the University of St. Andrews; Laureate Inst. Fr. <i>The Swallowgate, St. Andrews, N.B.</i>	
1887	Pickard-Cambridge, Rev. Octavius, M.A. <i>Bloxworth, Wareham, Dorset.</i>	
1890	Pickering, Spencer Percival Umfreville, M.A. F.C.S. F.I.C. Mem. Phys. Soc. Lond. <i>Harpenden, Herts; Woolacombe, N. Devon; and 60 Palace Court, W.</i>	
1902	Plunkett, Right. Hon. Sir Horace Curzon, K.C.V.O. M.A. <i>104 Mount Street, W.</i>	
1902	Pope, William Jackson, F.C.G.I., F.C.S., F.I.C., Professor of Chemistry in the Municipal School of Technology, Manchester. <i>16 Hope Street, Higher Broughton, Manchester.</i>	
1889	Poulton, Edward Bagnall, M.A. D.Sc. (Oxon.) Hon. LL.D. (Princeton) F.L.S. F.Z.S. F.G.S. Fellow of Jesus College, and Hope Professor of Zoology in the University of Oxford. Corresp. Mem. Acad. Sci. New York, and Soc. Nat. Hist. Boston. <i>Wykeham House, Banbury Road, Oxford; and St. Helen's Cottage, St. Helen's, Isle of Wight.</i>	1897-99
1895	Power, William Henry, C.B., Medical Officer to H.M. Local Government Board. <i>Glenbrook, Greenhithe; and Local Government Board, Whitehall, S.W.</i>	
1888	Poynting, John Henry, D.Sc. Professor of Physics in the University of Birmingham. <i>10 Ampton Road, Edgbaston, Birmingham.</i>	1894-96

Date of Election		Service on Council, &c.
1881	Preece, Sir William Henry, K.C.B. Fellow of King's College, London; Past. Pres. Inst. Electr. Eng.; Past Pres. Inst. C.E.; Hon. Mem. Inst. E.E. (America); Officier Lég. Hon. France. <i>Gothic Lodge, Wimbledon; Penrhos, Carnarvon; and Athenæum Club, S.W.</i>	1887-89
1895	Purdie, Thomas, B.Sc. Ph.D. Hon. LL.D. (Aberd.) A.R.S.M. Professor of Chemistry in the University of St. Andrews. <i>The University, St. Andrews.</i>	
1896	Pye-Smith, Philip Henry, M.D. B.A. F.R.C.P. Consulting Physician to Guy's Hospital; Fellow of the University of London. <i>48 Brook Street, W.; and Athenæum Club.</i>	1891-92
1900	Rambaut, Arthur Alcock, M.A. (Dubl. et Oxon.) Sc.D. (Dubl.) F.R.A.S. Radcliffe Observer. <i>Radcliffe Observatory, Oxford.</i>	
1888	Ramsay, Sir William, K.C.B. Ph.D. (Tüb.) Ph.D. (Cracow) LL.D. (Glasg.) Sc.D. (Dubl., Camb.) F.C.S. F.I.C. Professor of Chemistry in University College, London; Officier of the Legion of Honour of France; Corresp. Inst. Fr. (Acad. Sci.), R. Istit. Veneto, For. Mem. Acad. der Wiss. Berlin, Soc. Holl. des Sci., Acad. Imp. Bohemia, R. Accad. d. Sci. Turin, Genootschap v. Phys. Rotterdam; Hon. Mem. Roy. Irish Acad. Amer. Phil. Soc., New York Acad. Sci., Lit. Phil. Soc., Manch., Pharmaceut. Soc., Soc. de Phys. et de Sci. Nat. Genève, K. Svenska Vetensk. Akad., Kong. Danske Videns. Selskab., Deutsch. Chem. Gesell. Berlin, Physikal. Verein, Frankfort-on-Main, Acad. Roy. Roumania, Amer. Chem. Soc. Medal: Davy. <i>19 Chester Terrace, Regent's Park, N.W.</i>	1896-97
1870	Ransom, William Henry, M.D. Coll. Reg. Med. Soc. Consulting Physician to the General Hospital, Nottingham. <i>The Pavement, Nottingham.</i>	
1884	Ransome, Arthur, M.A. M.D. F.R.C.P. Late Professor of Public Health in Owens College, and Examiner in Sanitary Science in Cambridge and Victoria Universities. Hon. Fell. of Caius Coll., Cambridge. <i>56 Shrewsbury Road, Oxton, Birkenhead.</i>	
1873	Rayleigh, John William Strutt, Lord, O.M. M.A. D.C.L. (Oxon.) Sc.D. (Camb. and Dubl.) LL.D. (Edin. Glasg. Toronto, and Univ. McGill) Ph.D. (Heidel.) Hon. Fellow of Trinity College, Cambridge; Officier of the Legion of Honour of France; Hon. Mem. Inst. C.E. F.R.A.S.; Soc. Reg. Edin., Acad. Reg. Hib., Soc. Lit. et Phil. Manc., Acad. Reg. Sci. Monach., Soc. Asiat. Beng., Soc. Honor.; Inst. Fr. (Acad. Sci.) Par. Corresp.; Acad. Reg. Sci. Hafn., Soc. Reg. Sci. Gött., Acad. Sci. Berol., Acad. Imp. Sci. Petropol. Corr. Soc.; Scientific Adviser to the Trinity House; Professor of Natural Philosophy in the Royal Institution. Medals: Copley, Royal. <i>Terling Place, Witham, Essex.</i>	1877-79 84-96 Sec. 1885-96
1876	Reed, Sir Edward James, K.C.B. <i>Broadway Chambers, Westminster, S.W.</i>	
1899	Reid, Clement, F.G.S. F.L.S. Geological Museum, 28 <i>Jermyn Street, S.W.</i>	

Date of Election		Service on Council, &c.
1898	Reid, Edward Waymouth, B.A. M.B. (Camb.) Professor of Physiology in University College, Dundee; St. Andrews University. <i>University College, Dundee.</i>	
1883	Reinold, Arnold William, M.A. Professor of Physics in the Royal Naval College, Greenwich. 9 <i>Vanbrugh Park Road, Blackheath, S.E.</i>	1899-01
1880	Reynolds, J. Emerson, M.D. Sc.D. (Dubl.) V.P. and Past. Pres. C.S. F.I.C. Past Pres. Soc. Chem. Ind. Late Professor of Chemistry, University of Dublin. 29 <i>Campden Hill Court, Kensington, W.</i>	1900-2 V.P. 1901-2
1877	Reynolds, Osborne, M.A. (Cantab.) LL.D. (Glasg.), Mem. Inst. C.E. Hon. Fellow Queen's Coll. Camb.; late Professor of Engineering in Victoria University, Manchester. Medal: Royal. 19 <i>Lady Barn Road, Fallowfield, Manchester.</i>	1882-84
1885	Ringer, Sydney, M.D. (Lond.) 15 <i>Cavendish Place, W.</i>	
1860	Ripon, George Frederick Samuel Robinson, Marquis of, K.G. G.C.S.I. C.I.E. D.C.L. (Oxon.) F.L.S. F.R.G.S. 9 <i>Chelsea Embankment, S.W.</i> ; and <i>Studley Royal, Ripon, Yorkshire.</i>	
1878	Roberts, Samuel, M.A. (Lond.) 27 <i>Nassington Road, Hampstead, N.W.</i>	
1899	Romer, Right Hon. Sir Robert, G.C.B. M.A., Lord Justice of Appeal. 27 <i>Harrington Gardens, South Kensington</i> ; and <i>Athenæum Club, S.W.</i>	
1863	Roscoe, Sir Henry Enfield, Knt., B.A. D.C.L. (Oxon.) LL.D. (Cantab. Dubl. Glasg. Montr.) Hon. M.D. (Heidelb.) Hon. D.Sc. (Vict.) Ph.D. V.P.C.S. Officier Lég. Hon. France; Corresp. Inst. Fr. (Acad. Sci.); Fellow of Univ. of Lond., Fellow of Univ. Coll., and Eton College; Emeritus Professor of Chemistry in Victoria University (Owens College); Hon. Mem. Literary and Phil. Soc. Manchester; Hon. Mem. New York Acad. Sci., Chem. Gesell. Berlin, Verein für Naturwiss. Brunswick, and Physikal. Verein. Frankfort-on-Main; Corresp. K. Bayer. Akad. Wiss. Munich, K. Gesell. Wiss. Göttingen, and Acad. Gioenia Sci. Nat. Catania; Mem. Amer. Phil. Soc. Philadelphia, K. Leop.-Carol. Akad. Halle, and Physiogr. Sällsk. Lund. Medal: Royal. 10 <i>Bramham Gardens, South Kensington, S.W.</i> ; and <i>Athenæum Club.</i>	1872-73 81-83 88-90 V.P. 1881-82 88-90
1886	Rosebery, Right Hon. Archibald Philip Primrose, Earl of, K.G. K.T. D.C.L. Trust. Brit. Mus. 38 <i>Berkeley Square, W.</i> ; and <i>Dalmeny Park, Linlithgowshire.</i>	
1901	Ross, Ronald, Major (I.M.S. retired), C.B. F.R.C.S. D.P.H. (United Colleges, Lond.). Professor of Tropical Medicine and Parasitology, University College, Liverpool. <i>University College, Liverpool.</i>	
1867	Rosse, Laurence Parsons, Earl of, K.P. B.A. D.C.L. (Oxon.) LL.D. (Camb. and Dubl.) F.R.A.S. Chancellor of the University of Dublin. <i>Birr Castle, Parsonstown, Ireland.</i>	1871-72 87-88 V.P. 1871-72 87-88
1872	Routh, Edward John, D.Sc. (Cantab. et Dubl.) LL.D. (Glasg.) M.A. (Lond.) Fellow of the University of London; Hon. Fellow St. Peter's College, Cambridge; F.R.A.S. F.G.S. <i>Newnham Cottage Queen's Road, Cambridge.</i>	1888-90

Fellows of the Royal Society.

31

Date of Election		Service on Council, &c.
1884	Rücker, Sir Arthur William, M.A. (Oxon.) D.Sc. (Oxon. Cantab. Vict.) LL.D. (Glasg. Edin.), Hon. Fellow of Brasenose Coll., Oxford; Principal and Fellow of the University of London; Corr. Mem. Leeds Lit. and Phil. Soc.; Hon. Mem. Royal Cornwall Polytechnic Society. Medal: Royal. 19 <i>Gledhow Gardens, South Kensington, S.W.</i> ; and <i>Athenæum Club, S.W.</i>	1887-89 1894-1901 Sec. 1896-1901
1886	Russell, Henry Chamberlaine, C.M.G. B.A. (Sydn.) F.R.A.S. F.R. Met. Soc. Government Astronomer of New South Wales. <i>The Observatory, Sydney, N.S. Wales.</i>	
1872	Russell, William James, Ph.D. V.P.C.S., late Lecturer on Chemistry at the Medical School of St. Bartholomew's Hospital. 34 <i>Upper Hamilton Terrace, N.W.</i>	1885-8 97-99 V.P. 1897-99
1903	Rutherford, Ernest, M.A. D.Sc. Professor of Experimental Physics, McGill University, Montreal. Medal: Rumford. <i>McGill University, Montreal, Canada.</i>	
1903	Sampton, Ralph Allen, M.A. (Camb.) D.C.L. Professor of Mathematics, University of Durham. <i>Observatory House, Durham.</i>	
1881	Samuelson, Right Hon. Sir Bernhard, Bart., Mem. Inst. C.E. 56 <i>Prince's Gate, S.W.</i>	1887-88
1867	Sanderson, Sir J. S. Burdon, Bart., M.A. (Oxon.) M.D. LL.D. Sc.D. (Dubl.) LL.D. (Edin.) D.C.L. (Dunelm.) F.R.S.E. F.R.C.P. Late Regius Professor of Medicine in the University of Oxford; Hon. Fellow of Magdalen College; Corr. Mem. K. Preuss. Akad. Wiss. Berl.; Inst. Fr. (Acad. Sci.) Medal: Royal. 64 <i>Banbury Road, Oxford.</i>	1873-75 84-86 93-95 V.P. 1874-75 94-95
1902	Saunders, Edward, F.L.S. F.E.S. <i>St. Ann's, Mount Hermon, Woking.</i>	
1878	Schäfer, Edward Albert, M.R.C.S. LL.D. (Aberd.) Professor of Physiology in the University of Edinburgh, Hon. Mem. Roy. Phil. Soc. Glasgow. Medal: Royal. <i>North Berwick.</i>	1890-92 1902-03
1901	Schlich, William, C.I.E. Ph.D. F.L.S. Principal Professor of Forestry in the Royal Indian Engineering College, Cooper's Hill. <i>Englefield Green, Surrey.</i>	
1879	Schuster, Arthur, Sc.D. (Camb.) Ph.D. F.R.A.S. Mem. Inst. Elect. Eng., Roy. Phil. Soc. Glasg., Hon. Mem. Phil. Soc. Camb., Corr. Mem. Roy. Soc. Sci. Gött., Professor of Physics in the Victoria University of Manchester. Medal: Royal. <i>Kent House, Victoria Park, Manchester.</i>	1885-87 98-99
1861	Sclater, Philip Lutley, M.A. D.Sc. (Oxon.) Ph.D. (Bonn) Hon. Fellow of Corpus Christi College, F.L.S. F.G.S. F.R.G.S., late Secretary of the Zoological Society of London. 3 <i>Hanover Square, W.</i> ; and <i>Odiham Priory, Winchfield, Hants.</i>	1872-73 86-87
1898	Scott, Alexander, M.A. (Camb.) D.Sc. (Edin.) F.R.S.E. F.C.S. <i>Davy-Faraday Laboratory, Albemarle Street, W.</i>	
1894	Scott, Dukinfield Henry, M.A. (Oxon.) Ph.D. (Würzb.) F.L.S. F.G.S. Honorary Keeper of the Jodrell Laboratory, Royal Botanic Gardens, Kew. <i>Old Palace, Richmond, Surrey.</i>	1897-99
1870	Scott, Robert Henry, M.A. D.Sc. (Dubl.) F.Z.S. F.R. Met. Soc., late Secretary to the Meteorological Council. Officer of the Legion of	1900-2

- Honour; Ord. Coron. Ferr. Austr. Eq.; Acad. Cæs. **Leop. Soc.**; Soc. Met. Fr. Par., Soc. Imp. Reg. Zool. Bot., Soc. Met. Austr. Vindob., Soc. Met. Germ. Berol. et Soc. Nat. Scrutat. **Emb. Soc.** Honor.; Inst. Geol. Imp. Vindob. Soc. Met. Ital. Taurin. et Soc. Isis Dresd. Mem. Corr. 6 *Elm Park Gardens, S.W.*
- 1886 Sedgwick, Adam, M.A. Fellow, Tutor, and Lecturer of Trin. Coll., Cambridge, and Reader of Animal Morphology in the University. 188
190
4 *Cranmer Road, Cambridge.*
- 1879 Seeley, Harry Govier, F.L.S. F.G.S. F.Z.S. F.R.G.S. Professor of Geology and Geography with Mineralogy in King's College, London; Lecturer on Geology and Mineralogy in the Royal Indian Engineering College, Cooper's Hill; Inst. Imp. Reg. Geol., et Acad. Reg. Sci. Vindob. et Acad. Sci. Nat. Philad. Corresp.; Soc. Phil. Ebor., Soc. Imp. Sci. Nat. Hist. Mosq. Soc., Senckenberg. Natur Gesell. Franf. Corresp. Hon. Mem. S. African Phil. Soc.; Mem. Corr. Acad. Sci. St. Petersburg. 25 *Palace Gardens Terrace, Kensington, W.*; and *Athænum Club, W.*
- 1900 Sell, William James, M.A. Senior Demonstrator of Chemistry in the University of Cambridge. 11 *Downing Grove, Cambridge.*
- 1898 Seward, Albert Charles, M.A. (Camb.) F.G.S. F.L.S. Fellow of Emmanuel College; late Fellow of St. John's College; University Lecturer in Botany, Cambridge. *Westfield, Huntingdon Road, Cambridge.*
- 1890 Sharp, David, M.B. C.M. (Edin.) Hon. M.A. (Camb.) F.L.S. F.Z.S. Hon. Mem. New Zealand Inst. *Museum of Zoology, Cambridge*; and *Hawthorndene, Hills Road, Cambridge.*
- 1891 Shaw, William Napier, M.A. Sc.D. Fellow of Emmanuel College, Cambridge; Secretary to the Meteorological Council. *Meteorological Office, 68 Victoria Street*; and 10 *Moreton Gardens, South Kensington, S.W.* 1903-
- 1898 Shenstone, William Ashwell, F.I.C. *Clifton College, Bristol*; and *Tuffleigh, St. Vincent's Rocks, Clifton, Bristol.*
- 1898 Sherrington, Charles Scott, M.A. M.D. (Camb.) Sc.D. (Camb.) Hon. LL.D. (Toronto); Holt Professor of Physiology in University College, Liverpool; Mem. Corr. Honor. Soc. Neurol. Paris; Mem. Corr. K. Med. Gesell. Vienna; Silliman Memorial Lecturer, Yale University. 16 *Grove Park, Liverpool.* 1900-2
- 1904 Shipley, Arthur Everett, M.A. F.Z.S. University Lecturer in the Advanced Morphology of Invertebrates, University of Cambridge. *Christ's College, Cambridge.*
- 1901 Smithells, Arthur, B.Sc. (Lond.) F.I.C. Professor of Chemistry in the Yorkshire College, Leeds. 2 *St. Chad's Villas, Far Headingley, Leeds.*
- 1887 Snelus, George James, A.R.S.M. Mem. Inst. M.E. Vice-Pres. Iron and Steel Inst. *Ennerdale Hall, Frizington, Cumberland.*
- 1889 Sollas, William Johnson, D.Sc. (Camb.) LL.D. (Dubl.) F.R.S.E. F.G.S. Professor of Geology in the University of Oxford; Fellow of University College, Oxford. 173 *Woodstock Road, Oxford.*

Fellows of the Royal Society.

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Date of Election		Service on Council, &c.
1857	Sorby, Henry Clifton, LL.D. (Cantab.) F.L.S. F.G.S. F.Z.S. F.S.A. F.R.M.S., Soc. Min. Petrop., Soc. Holland. Harl. Socius.; Acad. Lync. Romæ. Adsoc. Extr.; Amer. Acad. Arts et Sci. Soc. Honor.; Acad. Sci. Nat. Philad. et Acad. Sci. Nov. Ebor. Corr. Mem. Medal: Royal. <i>Broomfield, Sheffield.</i>	1876-77
1900	Spencer, W. Baldwin, C.M.G. B.A. (Oxon.) M.A. (Melb.). Professor of Biology in the University of Melbourne; Fellow of Lincoln College, Oxford; Corr. Mem. Z.S. <i>The University, Melbourne, Victoria.</i>	
1878	Sprengel, Hermann Johann Philipp, Ph.D. (Heidelb.) F.C.S. Royal Prussian Professor. <i>Savile Club, 107 Piccadilly, W.</i>	
1899	Starling, Ernest Henry, M.D. F.R.C.P. Jodrell Professor of Physiology in University College, London. <i>40 West End Lane, Hampstead, N.W.</i>	
1903	Stead, John Edward, F.O.S. <i>11 Queen's Terrace, Middlesbrough.</i>	
1896	Stebbing, Rev. Thomas Roscoe Rede, M.A. (Oxon.) B.A. (Lond.) F.L.S. F.Z.S., Fellow of King's Coll., London. <i>Ephraim Lodge, The Common, Tunbridge Wells.</i>	
1896	Stewart, Charles, LL.D. (Aberd.) M.R.C.S. F.L.S. Conservator of the Museum of the Royal College of Surgeons, and Hunterian Professor of Human and Comparative Anatomy. <i>38 Lincoln's Inn Fields, W.C.</i>	
1893	Stirling, Edward Charles, C.M.G. M.A. M.D. (Camb.) F.R.C.S. C.M.Z.S. Late Surgeon, Adelaide Hospital; Professor of Physiology in the University of Adelaide; Director of the South Australian Museum. <i>The University, Adelaide, South Australia.</i>	
1902	Stirling, Right Hon. Sir James, M.A. (Camb.), Lord Justice of Appeal. <i>3 Hans Crescent, S.W.; and Finchcocks, Goudhurst.</i>	
1881	Stoney, Bindon Blood, LL.D. M.Inst.C.E. M.R.I.A. M.I.N.A. <i>14 Elgin Road, Dublin.</i>	
1861	Stoney, George Johnstone, M.A. Sc.D. (Dubl.) D.Sc. (the late Queen's University) F.B.A.S., Mem. Amer. Phil. Soc., Corresp. Mem. Acad. Sci. di Lettere ed Arti, Benevento. <i>30 Ledbury Road, Notting Hill, W.</i>	1898-1900 V.P. 1899-1900
1854	Strachey, Sir Richard, Lieut.-General, R.E. G.C.S.I. LL.D. (Cantab.) F.G.S. F.L.S. Chairman of the Meteorological Council; Hon. Mem. Asiat. Soc. Bengal. Medal: Royal. <i>69 Lancaster Gate, Hyde Park, W.</i>	1872-74 80-81 84-86 90-91 V.P. 1880-81 85-86
1903	Strahan, Aubrey, M.A. (Camb.), F.G.S. <i>12 Marloes Road, Kensington, W.</i>	
1904	Strathcona, Donald Alexander Smith, Baron, G.C.M.G. High Commissioner for Canada. <i>28 Grosvenor Square, W.</i>	
1888	Sudeley, Charles Douglas Richard Hanbury-Tracy, Lord. <i>Ormeley Lodge, Ham Common, Surrey.</i>	
1894	Swan, Sir Joseph Wilson, D.Sc. M.A. (Durh.) F.C.S. F.I.C. Past President Inst. Elect. Eng. Vice-Pres. Senate Univ. Coll. Lond.; Vice-Pres. Lit. and Phil. Soc. Newcastle; Cor. Mem. Phil. Soc.	1900-2

- Glasgow; Chev. de la Légion d'Honneur. **Medal: Hughes.**
58 *Holland Park, W.*
- 1903 Symington, Johnson, M.D. F.Z.S. F.R.S.E. Professor of Anatomy,
Queen's College, Belfast. *Queen's College, Belfast.*
- 1899 Tanner, Henry William Lloyd. D.Sc. (Oxon.) F.R.A.S. A.R.S.M.
Professor of Mathematics and Astronomy in the University
College of South Wales and Monmouthshire. *University College,
Cardiff.*
- 1898 Taylor, Henry Martyn. Fellow of Trinity College, Cambridge. *The
Yews, Queen's Road, Cambridge.*
- 1888 Teale, Thomas Pridgin, M.A. F.R.C.S. *North Grange, Headingley,
Leeds.*
- 1890 Teall, J. J. H., M.A. F.G.S. Director-General of the Geological 1899-1901
Survey of the United Kingdom, and of the Museum of Practical **V.P.**
Geology, London. 89 *Thurlow Park Road, West Dulwich, S.E.;* 1900-01
Geological Museum, Jermyn Street; and Athenæum Club, S.W.
- 1869 Tennant, James Francis, Lieut.-General, R.E. C.I.E. F.R.A.S.
11 *Clifton Gardens, Maida Hill, W.*
- 1880 Thiselton-Dyer, Sir William Turner, K.C.M.G. C.I.E. M.A. (Oxon.) 1886-88
B.Sc. (Lond.) Ph.D. LL.D. (Glasg.) F.L.S. Director Royal 96-97
Botanic Gardens, Kew; Botanical Adviser to H.M. Secretary of **V.P.**
State for the Colonies; Hon. Student of Christ Church, Oxford; 1896-97
late Fellow Univ. of London; Hon. Fellow, King's Coll., Lond.,
Bot. Soc. Edin.; Hon. Mem. Roy. Bot. Soc. Lond., Pharm. Soc.
Gt. Britain, Camb. Phil. Soc., Lit. Phil. Soc. Manchester, Soc.
Néerland. d'Hort. et de Bot., New Zealand Institute, Roy. Soc.
N.S.W., Dominico Agric. Soc.; Corresp. Acad. Sci. Philad.,
Boston Soc. Nat. Hist., Hort. Soc. Berlin and Massachusetts,
Soc. Nat. Sci. et Math. de Cherb., Corresp. Accad. Sci. Lett. ed
Arti d. Zelanti, Acioreale, and Botan. Soc. Copenhagen; Mem.
Assoc. Soc. Roy. de Bot. de Belgique; Mitg. Kais.-Leop.-Carol.
Deutsch. Acad. der Naturf. in Halle. *Royal Gardens, Kew.*
- 1901 Thomas, M. R. Oldfield, F.Z.S. F.R.G.S. Senior Assistant in the
Zoological Department of the British Museum. 9 *St. Petersburg
Place, Bayswater, W.*
- 1891 Thompson, Silvanus Phillips, B.A. D.Sc. (Lond.), M.D. (Königsberg),
F.R.A.S. Reg. Acad. Sci. Suec. Soc., Phys. Verein, Francof. ad
Mœnum. Soc. Honor. Soc. Phil. Ebor. Soc. Honor., Amer. Acad.
Sci., Past Pres. Phys. Soc. and Inst. Elec. Eng. Lond., Principal and
Professor of Physics in the City and Guilds of London Technical Col-
lege, Finsbury. *Morland, Chislett Road, West Hampstead, N.W.*
- 1897 Thomson, John Millar, LL.D. (Glasg.) F.C.S. Professor of Chemistry
in King's College, London. 9 *Campden Hill Gardens, W.*
- 1884 Thomson, Joseph John, M.A. Sc.D. (Dubl.) D.Sc. (Vict.) LL.D. (Glasg. 1889-91
Princeton) Hon. Mem. Lit. Phil. Soc. Manc., Roy. Dubl. Soc., R. 1898-1900
Accad. Sci. Turin, K. Vetensk.-Soc. Upsala; Fellow of Trinity
College and Cavendish Professor of Experimental Physics, Cam-
bridge. **Medals: Royal, Hughes.** *Trinity College, Cambridge.*

Date of Election		Services on Council, &c.
1898	Thornycroft, Sir John Isaac, M. Inst. C.E. <i>Eyot Villa, Chiswick Mall, Chiswick.</i>	
1876	Thorpe, Thomas Edward, C.B. D.Sc. (Vict.) Sc.D. (Dubl.) Ph.D. (Heid.) LL.D. (Glasg.) V.P.O.S. Principal of the Government Laboratories; Fellow of the University of London; Hon. Fellow Roy. Soc. Edin.; Past Pres. Soc. Chem. Indust.; Soc. Chem. Berol. Socius; Soc. Phil. Glasg. Mem. Corr.; Soc. Phil. Leeds, Soc. Lit. Phil. Manc., Soc. Pharm. Soc. Honor.; Soc. Bat. Sci. Harl. Soc. Extr. Medal: Royal. Government Laboratories, Clement's Inn Passage, Strand, W.C.; and Athenæum Club, S.W.	1890-91 93-95 99-08 V.P. 1894-95 For. Sec. 1899-08
1899	Threlfall, Richard, M.A. 30 George Road, Edgbaston, Birmingham.	
1869	Thuillier, Sir Henry Edward Landor, General, R.A. C.S.I. F.R.G.S. <i>Tudor House, Richmond, Surrey.</i>	
1880	Tilden, William Augustus—Vice-President—D.Sc. (Lond.) Sc.D. (Dubl.) Pres. C.S. F.I.C. Professor of Chemistry in the Royal College of Science, London; Hon. Mem. Pharm. Soc., Soc. Pub. Anal., Soc. Nat. Bristol, Phil. Soc. Birmingham. Coll. Pharm. Philad. <i>The Oaks, Northwood, Middlesex.</i>	1892-94 1904-
1891	Tizard, Thomas Henry, Captain R.N. C.B. F.R.G.S. Assistant Hydrographer of the Admiralty. <i>Hydrographic Department, Admiralty, Whitehall, S.W.</i>	1902-04
1889	Todd, Sir Charles, M.A. (Camb.) K.C.M.G. F.R.A.S. Postmaster-General, Superintendent of Telegraphs and Government Astronomer, South Australia. <i>The Observatory, Adelaide, South Australia.</i>	
1878	Tomes, Charles Sissmore, M.A. (Oxon.). 9 Park Crescent, Portland Place, W.	
1889	Tomlinson, Herbert, B.A. (Oxon.). <i>Gilling, Upper Station Road, Bezhill-on-Sea.</i>	
1903	Townsend, John S., M.A. (Dubl.). Wykeham Professor of Physics, Oxford. <i>New College, Oxford.</i>	
1898	Trail, James William Helenus, A.M. M.D. C.M. (Aberd.) F.I.S. Regius Professor of Botany in the University of Aberdeen. <i>The University, Aberdeen, N.B.</i>	
1904	Travers, Morris William, D.Sc. (Lond.). Professor of Chemistry in University College, Bristol. <i>University College, Bristol.</i>	
1881	Traquair, Ramsay H. M.D. LL.D. F.R.S.E. F.G.S. Keeper of the Natural History Collections in the Museum of Science and Art, Edinburgh. 8 Dean Park Crescent, Edinburgh.	
1883	Trimen, Roland, Hon. M.A. (Oxon.) F.L.S. F.Z.S. F.E.S. Hon. Mem. South African Phil. Soc. and Soc. Imp. Amis. Sci. Nat. de Mosc.; late Curator of the South African Museum. c/o Edward Trimen, Esq., 61 St. John's Park, N.	
1868	Tristram, Rev. Henry Baker, M.A. (Oxon.) LL.D. (Edin. and St. Andrews) D.D. C.M.Z.S. Canon of Durham. <i>College, Durham.</i>	
1897	Trouton, Frederick Thomas, M.A. Sc.D. (Dubl.) Quain Professor of Physics in University College, London. 2 Holland Park W.; and <i>University College, W.C.</i>	

Date of Election		Service on Council, &c.
1897	Turner, Herbert Hall, D.Sc. F.R.A.S. Savilian Professor of Astronomy in the University of Oxford, Corr. Mem. Soc. Spettros. Ital. <i>University Observatory, Oxford.</i>	1901-08
1877	Turner, Sir William, K.C.B. M.B. (Lond.) D.C.L. (Durh. Toronto and Oxf.) LL.D. (Glasg. and Univ. McGill) Sc.D. (Camb. and Dubl.) F.R.C.S. (Edin.) F.R.S.E.; Hon. Assoc. Ord. Hosp. St. John, Jerusalem; President of the General Medical Council; late Professor of Anatomy in the University of Edinburgh; Hon. Prof. Anat. Roy. Soc. Acad.; Hon. Mem. Roy. Irish Acad.; Hon. Fell. Roy. Med. Chir. Soc. London; Hon. Fell. Obst. Soc. Lond. and Edin.; For. Assoc. Anthropol. Soc. Paris; Corr. Mem. Akad. Wiss. Berlin, Soc. Anthropol. Ethnol. and Prehist. Arch. Berlin. Corr. Mem. Soc. Anthropol. Rome; Hon. Mem. Milit. Acad. Med. St. Petersburg. 6 <i>Eton Terrace, Edinburgh; and Athenæum Club, S.W.</i>	1890-91
1899	Tutton, Alfred Edwin Howard, D.Sc. F.C.S. A.R.C.S. 17 <i>Bardwell Road, Oxford.</i>	
1871	Tylor, Edward Burnett, D.C.L. (Oxon.) LL.D. (St. And. Aberd. and McGill) Assoc. Acad. Reg. Belg. Professor of Anthropology in the University of Oxford. <i>Museum House, Oxford.</i>	1899-1900
1886	Unwin, W. Cawthorne, B.Sc. Mem. Inst. C.E.; Hon. Mem. Inst. M.E.; Mem. Amer. Phil. Soc.; Hon. Mem. Amer. Soc. Mech. Eng.; Professor of Engineering at the Central Technical College of the City and Guilds of London Institute. <i>Palace Gate Mansions, 29 Palace Gate, Kensington, W.</i>	1893-94
1894	Veley, Victor Herbert, M.A. D.Sc. 20 <i>Bradmore Road, Oxford.</i>	
1883	Venn, John, Sc.D., Fellow of Caius College, Cambridge. <i>Vicarsbrook, Chancer Road, Cambridge.</i>	
1885	Vines, Sydney Howard, M.A. (Oxon.) D.Sc. (Camb. and Lond.) F.L.S. Sherardian Professor of Botany in the University of Oxford; Fellow of Magdalen College, Oxford; Hon. Fellow of Christ's College, Cambridge; Hon. Mem. Manc. Lit. Phil. Soc. and Roy. Phys. Soc. Edin.; Corr. Mem. Soc. Nat. Sci. et Math. de Cherb., Soc. Roy. Bot. de Belg., and Soc. Nat. Hist. Bost. <i>Headington Hill, Oxford.</i>	1890-92
1904	Wager, Harold W. T., F.L.S. H.M. Inspector of Schools, Secondary Branch, Board of Education. <i>Arnold House, Bass Street, Derby.</i>	
1904	Walker, Gilbert Thomas, M.A. F.R.A.S. Meteorological Reporter to the Indian Government; late Lecturer and Fellow of Trinity College, Cambridge. <i>Simla, India.</i>	
1900	Walker, James, D.Sc. (Edin.) Ph.D. (Leipz.) Professor of Chemistry in University College, Dundee. 8 <i>Windsor Terrace, Dundee.</i>	
1893	Wallace, Alfred Russel, LL.D. D.C.L. F.L.S. F.Z.S. Medals: Royal, Darwin. <i>Broadstone, Wimborne, Dorset.</i>	
1892	Waller, Augustus Désiré, M.D. Lecturer on Physiology at St. Mary's Hospital Medical School. 32 <i>Greve End Road, N.W.</i>	
1887	Walsingham, Thomas de Grey, Lord, M.A. LL.D. High Steward of the University of Cambridge; Trust. Brit. Mus.; F.L.S. F.Z.S.	1896-97

Fellows of the Royal Society.

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Date of
Election

Service on
Council, &c.

- F.E.S.; Mem. Soc. Ent. de France, Ent. Ver. zu Berlin, Netherlands Ent. Ver., Soc. Ent. de Russie, Linn. Soc. N.S.W. *Merton Hall, Thetford, Norfolk.*
- 1888 Ward, Harry Marshall, D.Sc. F.L.S. Fellow of Sidney Sussex College, and Hon. Fellow of Christ's College, Cambridge; Professor of Botany in the University of Cambridge. Medal: Royal. *Botanical Laboratory, New Museums, Cambridge.* 1895-96
- 1886 Warrington, Robert, M.A. (Oxon.) F.C.S. late Sibthorpean Professor of Rural Economy in the University of Oxford. *High Bank, Harpenden, Herts.*
- 1884 Warren, Sir Charles, Lieut.-General, R.E. G.C.M.G. K.C.B. 10 *Wellington Crescent, Ramsgate; and Athenæum Club, S.W.*
- 1901 Watson, William, D.Sc. A.R.C.S. (Lond.) Assistant Professor of Physics in the Royal College of Science London. 7 *Upper Cheyne Row, Chelsea, S.W.*
- 1904 Watts, William Whitehead, M.A. (Camb.) M.Sc. (Birm.) Sec. G.S. Assistant Professor of Geology and Professor of Geography in the University of Birmingham. *Holmwood, Four Oaks, Sutton Coldfield.*
- 1900 Watts, Philip, Director of Naval Construction. 10 *Chelsea Embankment, S.W.*
- 1890 Weldon, Walter Frank Raphael, M.A. D.Sc., late Fellow of St. John's College, Cambridge; Fellow of Merton College and Linacre Professor of Human and Comparative Anatomy in the University of Oxford. *Merton Lea, Oxford.* 1896-98
- 1886 Wharton, Sir William James Lloyd, Rear-Admiral, K.C.B. F.R.A.S. F.R.G.S. Hydrographer of the Admiralty. *Florys, Prince's Road, Wimbledon Park; and Athenæum Club, S.W.* 1888-89
95-97
1904-
- 1901 Whetham, William Cecil Dampier, M.A. Lecturer in Physics and Fellow of Trinity College, Cambridge. *Upwater Lodge, Cambridge.*
- 1887 Whitaker, William, B.A. F.G.S. Assoc. Inst. C.E. Corr. Acad. Nat. Sci. Philad., Hon. Mem. Soc. Belg. de Géol. 3 *Camden Road, Croydon.*
- 1888 White, Sir William Henry, K.C.B. LL.D. (Glasg.) D.Sc. (Camb.) F.R.S.E. Mem. Inst. C.E. Fellow Royal School of Naval Architecture; V.P. Inst. Naval Architects; Past. Pres. Inst. Mech. Eng.; For. Mem. Roy. Acad. Sci. Sweden; late Assistant Controller and Director of Naval Construction. *Cedarcroft, Putney Heath, S.W.; and Athenæum Club, S.W.* 1894-95
- 1903 Whitehead, Alfred North, Fellow and Lecturer in Mathematics, Trinity College, Cambridge. *The Mill House, Grantchester, Cambridge.*
- 1886 Wilde, Henry, D.Sc. D.C.L. (Oxon.) Past. Pres. Lit. Phil. Soc. Manch., Hon. Mem. Inst. Electr. Eng. *The Hurst, Alderley Edge, Cheshire.*
- 1870 Wilks, Sir Samuel, Bart. M.D. LL.D. F.R.C.P. late Pres. R. Coll. Phys. Consulting Physician to Guy's Hospital. 8 *Prince Arthur Road, Hampstead, N.W.* 1899-1900

Date of
ElectionService on
Council, &c.

- 1902 Willey, Arthur, D.Sc. *The Museum, Colombo, Ceylon.*
- 1862 Williams, C. Greville, F.C.S. 21 *Bournevale Road, Streatham, S.W.*
- 1879 Williamson, Benjamin, D.Sc. D.C.L. (Oxon.) M.R.I.A. Senior Fellow of Trinity College, Dublin. *Trinity College, Dublin.*
- 1900 Wilson, Charles Thomson Rees, M.A. (Camb.) B.Sc. (Vict.) *Sidney Sussex College, Cambridge.*
- 1874 Wilson, Sir Charles William, Major-General, B.E. K.O.B. K.O.M.G. D.C.L. (Oxon.) LL.D. (Edin.) M.E. (Dubl.) F.R.G.S. *Athenæum Club, S.W.* 1869-90
- 1896 Wilson, William E., D.Sc. (Dubl.) M.R.I.A. F.R.A.S. *Daramona, Streete, Westmeath, Ireland.*
- 1899 Windle, Bertram Coghill Alan, M.A. M.D. Sc.D. (Dubl.) M.Sc. (Birm.) F.S.A. F.R.S. Antiq. Ireland; President of Queen's College, Cork. *President's House, Queen's College, Cork.*
- 1895 Wolfe Barry, Sir John, K.C.B. LL.D. Past. Pres. Inst. C.E. 23 *Delahay Street, Westminster, S.W.* 1902-03
- 1901 Woodward, Arthur Smith, LL.D. F.L.S. F.G.S. F.Z.S. F.R.G.S. Keeper of the Department of Geology, British Museum (Natural History). 4 *Scarsdale Villas, Kensington, W.*
- 1873 Woodward, Henry, LL.D. (St. And.) F.G.S. V.P.Z.S. F.R.M.S. Pres. Palæont. Soc. V.P. Malacol. Soc. Lond. Acad. Sci. Nov. Ebor. Soc. Phil. Amer. Philad. Soc.; Soc. Phil. Ebor., Assoc. Geol. Lond., Soc. Geol. Edin., Glasc., Liverp. et Nordov. Soc. Honor. Soc. Géol. Belg., Imp. Nat. Hist. Mosq., Hist. Nat. Montreal et Malacol. Belg. Corresp.; late Keeper of the Department of Geology, British Museum (Natural History). 129 *Beaufort Street, Chelsea, S.W.*
- 1896 Woodward, Horace Bolingbroke, F.G.S. Assistant Director of the Geological Survey. Hon. Mem. Norfolk Nat. Soc. and Yorksh. Phil. Soc. 89 *Marlborough Mansions, Cannon Hill, N.W.*; and *Geological Survey, Jermyn Street, S.W.*
- 1893 Worthington, Arthur Mason, C.B. M.A. F.R.A.S. Headmaster and Professor of Physics, Royal Naval Engineering College, Devonport. *Mohuns, Tavistock.*
- 1896 Wynne, William Palmer, D.Sc. (Lond.) Sec. C.S. F.I.C. A.R.C.S. Firth Professor of Chemistry in University College, Sheffield; formerly Professor of Chemistry in the Pharmaceutical Society's School of Pharmacy. 106 *Whitham Road, Sheffield*; and *University College, Sheffield.*
- 1889 Yeo, Gerald Francis, M.D. (Dublin) F.R.C.S. Emeritus Professor of Physiology in King's College, London. *Bowden, Totnes, South Devon.*
- 1893 Young, Sydney, D.Sc. (Lond.) F.C.S. F.I.C. Professor of Chemistry in the University of Dublin. *Chemical Laboratory, Trinity College Dublin.*

FOREIGN MEMBERS.

Date of Election.		Medal.
1891.	Agassiz, Alexander. <i>Cambridge, Mass., U.S.A.</i>	
1897.	Amagat, Émile Hilaire. <i>École Polytechnique, Paris</i>	
1879.	Auwers, Georg Friedrich Julius Arthur, <i>Lindenstrasse, 91, Berlin</i>	
1885.	Baeyer, Adolf von. <i>Universität, Munich</i>	Davy.
1877.	Berthelot, Marcellin. <i>Secrétariat de l'Institut, Paris</i>	Copley, Davy.
1899.	Boltzmann, Ludwig. <i>Universität, Leipzig</i>	
1902.	Brogger, Waldemar Christofer. <i>K. Frederiks Universitet, Christiania</i>	
1889.	Cannizzaro, Stanislao. <i>Reale Università, Rome</i>	Copley.
1889.	Chauveau, Jean Baptiste Auguste. <i>Avenue Jules Janin, 10, Paris</i>	
1902.	Darboux, Gaston. <i>Secrétariat de l'Institut, Paris</i>	
1899.	Dohrn, Anton. <i>Naples</i>	
1899.	Fischer, Emil. <i>Universität, Berlin</i>	
1895.	Gaudry, Albert. <i>Rue des Saints-Pères, 7 bis, Paris</i>	
1896.	Heim, Albert. <i>Hochschule, Zürich</i>	
1902.	Hering, Ewald. <i>Universität, Leipzig</i>	
1902.	Hill, George William. <i>West Nyack, New York State, U.S.A.</i>	
1897.	Hoff, J. H. van't. <i>Universität, Berlin</i>	
1875.	Janassen, Pierre Jules César. <i>Observatoire de Meudon, Paris</i>	Rumford.
1885.	Klein, Felix. <i>Weender Chaussee, 6, Göttingen</i>	
1897.	Koch, Robert. <i>Universität, Berlin</i>	
1895.	Kohlrausch, Friedrich. <i>Physikalisch-Technische Reichsanstalt, Berlin</i>	
1860.	Kölliker, Albert von. <i>Universität, Würzburg</i>	Copley.
1895.	Langley, Samuel Pierpont. <i>Smithsonian Institution, Washington, U.S.A.</i>	
1901.	Leydig, Franz von. <i>Rothenberg a.d. T.</i>	
1896.	Lippmann, Gabriel. <i>Faculté des Sciences à la Sorbonne, Paris</i>	
1892.	Mascart, Éleuthère Élie Nicolas. <i>Rue de l'Université, 176, Paris</i>	
1892.	Mendeleeff, Dmitri Ivanovitch. <i>19, Zabalkansky, St. Petersburg</i>	Davy.
1895.	Metschnikoff, Elias. <i>Institut Pasteur, Paris</i>	
1902.	Michelson, Albert Abraham. <i>University, Chicago, U.S.A.</i> ..	
1896.	Mittag-Leffler, Gösta. <i>Högskolan, Stockholm</i>	
1899.	Neumayer, Georg von. <i>Hohenzoller Strasse, 9,</i>	
1877.	Newcomb, Simon. <i>1620, P Street, Washington, U.S.A.</i>	Copley.
1897.	Pfeffer, Wilhelm. <i>Universität, Leipzig</i>	
1888.	Pfäuger, Eduard Friedrich Wilhelm. <i>Universität, Bonn</i>	
1894.	Poincaré, Henri. <i>63, Rue Claude-Barnard, Paris</i>	Sylvester.
1879.	Quincke, Georg Hermann. <i>Friedrichsbau, Heidelberg</i>	
1902.	Richthofen, Baron Ferdinand von. <i>117, Kurfürstenstrasse, Berlin</i>	

Date of
Election.

Medal.

1896.	Schiaparelli, Giovanni. <i>R Osservatorio Astronomico di Brera, Milan</i>	
1902.	Solms-Laubach, Graf H. zu. <i>Universität, Strasburg</i>	
1891.	Strasburger, Eduard. <i>Universität, Bonn</i>	
1873.	Struve, Otto Wilhelm. <i>Fahnstrasse, 8, Carlsruhe, Germany</i> .	
1894.	Suess, Eduard. <i>Geologisches Museum, Vienna</i>	Copley.
1891.	Tacchini, Pietro. <i>Modena, Italy</i>	Rumford.
1902.	Thomsen, Julius. <i>Lindevei 13, Copenhagen</i>	
1899.	Treub, Melchior. <i>Buitenzorg, Java</i>	
1897.	Zirke, Ferdinand. <i>Universität, Leipzig</i>	

FELLOWS DECEASED BETWEEN THE ANNIVERSARY,
NOVEMBER 30, 1903, AND JANUARY 1, 1905.

On the Home List.

Allman, George Johnston, LL.D.
Bell, Sir Lowthian, Bart.
Bramwell, Sir Frederick Joseph, Bart.
Etheridge, Robert.
Everett, Joseph David, M.A.
Foster, Sir Clement Le Neve.
Harcourt, Rt. Hon. Sir William George
Granville Venables Vernon.
McClellan, Frank, M.A.
McLachlan, Robert.

McMahon, Lieut.-Gen. Charles Alexander.
Northbrook, Thomas George Baring,
Earl of.
Ommanney, Admiral Sir Erasmus, K.C.B.
Roberts, Isaac.
Salmon, Rev. George, D.D.
Simon, Sir John, K.C.B.
Williamson, Alexander William.

FELLOWS ELECTED BETWEEN THE ANNIVERSARY,
NOVEMBER 30, 1903, AND JANUARY 1, 1905.

1904. Brodie, Dr. Thomas Gregor.
1904. Burrard, Major Sidney Gerald.
1904. Dixon, Prof. Alfred Cardew.
1904. Dobbie, James Johnston.
1904. Holland, Thomas Henry.
1904. Joly, Prof. Charles Jasper.
1904. Marshall, Hugh.
1904. Meyrick, Edward.
1904. Muirhead, Alexander.

1904. Nuttall, Dr. George Henry F.
1904. Shipley, Arthur Everett.
1904. Strathcona, Donald Alexander
Smith, Baron.
1904. Travers, Prof. Morris William.
1904. Wager, Harold.
1904. Walker, Gilbert Thomas.
1904. Watts, William Whitehead.

COMMITTEES, 1905.

NOTE.—*The President, by Statute, presides over all Committees which he attends.*

The Treasurer, Principal Secretaries, and Foreign Secretary are ex officio members of all Committees, excepting the Scientific Relief Committee, the Sectional Committees, and any Committees composed of representatives of the Royal and other Societies jointly.

Each Committee, excepting those specified in the preceding paragraph, has power to co-opt additional members, subject to their names being reported to the Council for approval. Membership of such Committees is not necessarily confined to Fellows of the Royal Society.

STANDING AND OCCASIONAL COMMITTEES.

ANTARCTIC MAGNETIC OBSERVATIONS COMMITTEE.

Dr. Chree (*Secretary*), Capt. Creak, Dr. Glazebrook, Sir J. Murray, Prof. Schuster, Dr. W. N. Shaw, Capt. Tizard, Sir W. Wharton, with Capt. Field, Lieut. Armitage, and Capt. Henderson of the Compass Department.

ANTARCTIC METEOROLOGICAL OBSERVATIONS COMMITTEE.

Mr. J. Y. Buchanan, Dr. Chree, Dr. Glazebrook, Sir J. Murray, Dr. W. N. Shaw (*Secretary*), Capt. Tizard, Sir W. Wharton, and Mr. C. T. R. Wilson, with Capt. Field, Mr. H. N. Dickson, Mr. W. H. Dines, Mr. Ferrar, Mr. A. J. Herbertson, Dr. H. R. Mill, and Lieut. Royds.

CATALOGUE OF SCIENTIFIC PAPERS COMMITTEE.

Chairman—Sir John Evans.

Prof. Armstrong, Mr. Bateson, Dr. W. T. Blanford, Sir John Evans, Prof. Forsyth, Sir M. Foster, Prof. Judd, Dr. Klein, Sir J. N. Lockyer, Prof. McKendrick, Prof. McLeod, Dr. Mond, Sir W. H. Preece, Dr. Routh, Mr. E. Saunders, Dr. D. H. Scott, Dr. Thorpe, and Prof. Tilden.

“CHALLENGER REPORTS” COMMITTEE.

Chairman—Sir J. D. Hooker.

Sir M. Foster, Sir J. D. Hooker, Prof. Lankester, Sir J. Murray, and Sir W. T. Thiselton-Dyer.

EVOLUTION COMMITTEE.

Chairman—Mr. F. D. Godman.

Mr. W. Bateson, Mr. Burbury, Prof. Ewart, Mr. F. D. Godman, Prof. Lankester, Prof. Macalister, Dr. Masters, and Prof. Poulton, with Sir E. Clarke and Mr. W. Heape.

FINANCE COMMITTEE.

Chairman—The Treasurer.

Dr. Mond, Dr. Müller, Sir Andrew Noble, Dr. R. H. Scott, and Sir J. W. Swan.

GOVERNMENT GRANT REVIEW COMMITTEE.

Chairman—Dr. H. Müller.

Prof. Bonney, Prof. Halliburton, Dr. H. Müller, Sir W. D. Niven, Prof. Reinold, Dr. Russell, and Dr. D. H. Scott.

INDIAN GOVERNMENT ADVISORY COMMITTEE.

Chairman—Sir W. T. Thiselton-Dyer.

Major Alcock, Dr. Blanford, Sir D. Brandis, Mr. H. T. Brown, Col. D. Bruce, Prof. Dunstan, Sir M. Foster, Mr. Gamble, Sir Joseph Hooker, Sir George King, Mr. Schlich, Gen. Sir R. Strachey, Sir W. T. Thiselton-Dyer, and Prof. H. M. Ward, with Surg.-Gen. Branfoot.

INTERNATIONAL ASSOCIATION OF ACADEMIES COMMITTEE.

Chairman—Sir M. Foster.

Prof. Armstrong, Prof. Forsyth, Sir M. Foster, Lord Kelvin, Prof. Lankester, Sir J. N. Lockyer, Sir Arthur Rücker, Prof. Schuster, Prof. Sherrington, and Dr. Waller.

JOINT ANTARCTIC COMMITTEE.

(On the part of the Royal Society.)

The President, The Treasurer, Dr. A. Buchan, Capt. Creak, Sir J. Evans, Sir M. Foster, Sir A. Geikie, Prof. Herdman, Sir J. D. Hooker, Prof. Poulton, Sir Arthur Rücker, Dr. Sclater, Dr. R. H. Scott, Mr. J. J. H. Teall, Capt. Tizard, and Adm. Sir W. J. L. Wharton.

JOINT PERMANENT ECLIPSE COMMITTEE.

(On the part of the Royal Society.)

The Astronomer Royal, Sir W. de W. Abney, Prof. H. L. Callendar, Prof. J. Larmor, Sir J. N. Lockyer, Major MacMahon, Prof. Schuster, Dr. G. J. Stoney, Gen. Tennant, Dr. Thorpe, and Adm. Sir W. J. L. Wharton.

LIBRARY COMMITTEE.

Chairman—Prof. Carey Foster.

Prof. W. Grylls Adams, Prof. Bonney, Prof. J. N. Collie, Prof. Farmer, Prof. Carey Foster, Prof. Greenhill, Prof. Halliburton, Dr. Harmer, Mr. Mathews, Prof. McLeod, Prof. D. Oliver, Dr. Sclater, and Prof. S. P. Thompson, with power to expend not exceeding £250 in the purchase of books, and a sum not exceeding £150 in binding books belonging to the Society.

OBSERVATORIES COMMITTEE.

Chairman—The Astronomer Royal.

The Astronomer Royal, the President of the Royal Astronomical Society, Sir W. de W. Abney, Prof. G. H. Darwin, Sir J. Eliot, Sir J. N. Lockyer, Mr. H. F. Newall, Sir Arthur Rücker, Prof. Schuster, Dr. W. N. Shaw, Gen. Sir R. Strachey, and Prof. Turner.

SCIENTIFIC RELIEF COMMITTEE.

Chairman—Prof. T. G. Bonney.

Prof. T. G. Bonney, Prof. W. A. Tilden, Dr. W. T. Blanford, Dr. W. J. Russell, Dr. Glaisher, Dr. Waller, Major MacMahon, Mr. Teall, Sir T. Lauder Brunton, and Sir W. D. Niven.

SEISMOLOGY COMMITTEE.

Chairman—Prof. Judd.

Sir W. de W. Abney, Mr. Boys, Prof. G. H. Darwin, Mr. Horace Darwin, Prof. Ewing, Prof. Carey Foster, Prof. Judd, Prof. Milne, Prof. Perry, Mr. C. Reid, Mr. Teall, and Prof. Turner.

SOIRÉE COMMITTEE.

Chairman—Sir W. Crookes.

Prof. Ayrton, Mr. W. Bateson, Mr. Boys, Sir W. Crookes, Sir J. Evans, Prof. Farmer, Sir M. Foster, Dr. S. F. Harmer, Major MacMahon, Prof. Perry, Prof. Poulton, Dr. R. H. Scott, and Dr. H. Woodward.

TROPICAL DISEASES COMMITTEE.

Chairman—Prof. Lankester.

Prof. Clifford Allbutt, Prof. Rubert Boyce, Prof. Bradford, Colonel D. Bruce, Sir M. Foster, Sir J. Kirk, Dr. Klein, Prof. Ray Lankester, Lord Lister, Sir P. Manson, Dr. C. J. Martin, Prof. Sidney Martin, Dr. Mott, Dr. Nuttall, Major R. Ross, Sir J. Burdon-Sanderson, and Prof. Sherrington, with Surg.-Gen. Branfoot, Mr. C. P. Lucas of the Colonial Office, Prof. McFadyean, Dr. Moffat, and Mr. Plimmer.

SECTIONAL COMMITTEES.

1. Mathematics Committee :—

(Two to retire each year.)

Chairman—Sir W. D. Niven.

	To serve.	Retires	Dec.,	1905.
Dr. H. F. Baker.....	1 year.	Retires	Dec.,	1905.
Sir W. D. Niven.....	1 "	"	"	"
Prof. Lamb.....	2 years.	"	"	1906.
Mr. H. M. Macdonald ...	2 "	"	"	"
Prof. Burnside	3 "	"	"	1907.
Prof. G. H. Darwin	3 "	"	"	"

2. Physics and Chemistry Committee :—

(Four to retire each year.)

Chairman—Prof. Callendar.

	To serve.			
Mr. F. W. Dyson	1 year.	Retires	Dec.,	1905.
Prof. Poynting	1 "	"	"	"
Dr. A. Scott	1 "	"	"	"
Prof. Trouton.....	1 "	"	"	"
Mr. C. V. Boys	2 years.	"	"	1906.
Prof. Callendar	2 "	"	"	"
Sir W. Ramsay	2 "	"	"	"
Mr. W. C. D. Whetham	2 "	"	"	"
Prof. Tilden	3 "	"	"	1907.
Mr. H. T. Brown	3 "	"	"	"
Dr. Chree	3 "	"	"	"
Dr. Buchan.....	3 "	"	"	"

3. Geology Committee :—

(Three to retire each year.)

Chairman—Mr. J. J. H. Teall.

	To serve.			
Capt. Tizard	1 year.	Retires	Dec.,	1905.
Dr. A. S. Woodward.....	1 "	"	"	"
Mr. H. B. Woodward ...	1 "	"	"	"
Mr. W. H. Hudleston ...	2 years.	"	"	1906.
Mr. E. T. Newton	2 "	"	"	"
Mr. J. J. H. Teall.....	2 "	"	"	"
Adml. Sir W. Wharton...	3 "	"	"	1907.
Mr. A. Harker	3 "	"	"	"
Mr. A. Strahan	3 "	"	"	"

4. Botany Committee :—

(Three to retire each year.)

Chairman—Prof. M. Ward.

	To serve.			
Dr. Masters	1 year.	Retires	Dec.,	1905.
Prof. Oliver	1 "	"	"	"
Prof. M. Ward	1 "	"	"	"
Mr. W. Gardiner	2 years.	"	"	1906.
Dr. D. H. Scott	2 "	"	"	"
Sir W. Thiselton-Dyer ...	2 "	"	"	"
Mr. H. Wager	3 "	"	"	1907.
Mr. Seward	3 "	"	"	"
Mr. Gamble	3 "	"	"	"

5. Zoology Committee :—

(Three to retire each year.)

Chairman—Prof. Weldon.

	To serve.			
Dr. Gadow	1 year.	Retires	Dec.,	1905.
Prof. Howes	1 "	"	"	"
Mr. Sharp	1 "	"	"	"
Mr. F. D. Godman	2 years.	"	"	1906.
Mr. J. J. Lister	2 "	"	"	"
Prof. Weldon	2 "	"	"	"
Mr. Boulenger	3 "	"	"	1907.
Mr. Shipley	3 "	"	"	"
Prof. J. C. Ewart	3 "	"	"	"

6. Physiology Committee :—

(Four to retire each year.)

Chairman—Prof. Halliburton.

	To serve.			
Prof. Halliburton	1 year.	Retires	Dec.,	1905.
Prof. Langley	1 "	"	"	"
Prof. McKendrick	1 "	"	"	"
Prof. Sherrington	1 "	"	"	"
Dr. Gaskell	2 years.	"	"	1906.
Dr. C. J. Martin	2 "	"	"	"
Dr. Mott	2 "	"	"	"
Prof. Starling	2 "	"	"	"
Prof. Osler	3 "	"	"	1907.
Dr. T. G. Brodie	3 "	"	"	"
Dr. H. Head	3 "	"	"	"
Mr. W. B. Hardy	3 "	"	"	"

GOVERNMENT GRANT BOARDS, 1905.

[New Members will, in future, join the Boards on January 1st,
and retire on December 31st.]

BOARD A.

(Mathematics, Mathematical Physics, Crystallography, and
Mathematical Astronomy.)

Chairman—Prof. Love.

	<i>Retire.</i>
Prof. Bryan, Prof. Lamb	March, 1906
Mr. L. Fletcher, Dr. Glaisher	,, 1907
Mr. F. W. Dyson, Prof. G. A. Gibson ...	December, 1907
Prof. C. J. Joly, Prof. A. E. H. Love ...	,, 1908

BOARD B.

(Experimental Physics, Observational Astronomy, and Meteorology.)

Chairman—Prof. Schuster.

Prof. J. J. Thomson, Prof. Gray.....	March, 1906
Prof. W. M. Hicks, Prof. Schuster.....	,, 1907
Mr. C. V. Boys, Prof. E. H. Griffiths ...	December, 1907
Prof. H. L. Callendar, Prof. R. B. Clifton ..	,, 1908

BOARD C.

(Chemistry and Metallurgy.)

Chairman—Dr. Thorpe.

Prof. Collie, Prof. W. H. Perkin, Jun.	March, 1906
Prof. Tilden, Prof. Aug. Dixon	,, 1907
Mr. H. B. Baker, Dr. T. E. Thorpe	December, 1907
Prof. P. F. Frankland, Dr. A. Scott.....	,, 1908

BOARD D.

(Geology, Palæontology, Mineralogy, and Geography.)

Chairman—Prof. Miers.

Prof. Bonney, Prof. J. Geikie	March, 1906	Retire.
Prof. Lapworth, Prof. Miers	„ 1907	
Dr. Blanford, Prof. Judd	December, 1907	
Mr. E. T. Newton, Mr. J. J. H. Teall ..,	„ 1908	

BOARD E.

(Botany.)

Chairman—Prof. J. B. Farmer.

Mr. J. S. Gamble, Prof. J. R. Green	March, 1906
Prof. Balfour, Sir John Kirk	„ 1907
Prof. Bower, Prof. M. Ward ..	December, 1907
Prof. J. B. Farmer, Prof. S. H. Vines ...	„ 1908

BOARD F.

(Zoology and Comparative Anatomy.)

Chairman—Dr. Günther.

Prof. Haddon, Dr. Traquair	March, 1906
Dr. Günther, Prof. Herdman	„ 1907
Mr. Bateson, Dr. Harmer	December, 1907
Mr. G. A. Boulenger, Prof. J. G. Kerr ...	„ 1908

BOARD G.

(Animal Physiology and Medical Subjects.)

Chairman—Prof. Starling.

Prof. Halliburton, Prof. J. M. Purser	March, 1906
Dr. L. Hill, Prof. Starling	„ 1907
Prof. McKendrick, Prof. Sherrington ...	December, 1907
Colonel Bruce, Dr. W. H. Gaskell	„ 1908

STATUTES OF THE ROYAL SOCIETY.

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CHAPTER I.

Of the Election and Admission of Fellows.

I. No person shall be proposed, elected, or admitted a Fellow of the Society on the day of the Anniversary Meeting for electing the Council and Officers.

II. Every Fellow, previously to his proposing a person as a Candidate for Election, shall inform him of the Obligation to be subscribed, of the sum to be paid for admission money, and of the payments to be made to the Society, before he can be admitted a Fellow.

III. Every such Candidate shall be proposed and recommended by a certificate in writing signed by six or more Fellows, of whom three at least shall certify their recommendation from personal knowledge. The certificate shall specify the name, rank, profession, qualifications, and usual place of residence of the Candidate; and being delivered to one of the Secretaries, or to the Assistant Secretary,

shall be registered, with the date of delivery, in a book to be kept for the purpose, and read at the next ordinary meeting; and, unless otherwise ordered, shall be suspended in some convenient place in the apartments of the Society until the day of election.

IV. At the first Ordinary Meeting of the Society in January, the names of all Candidates proposed prior to the first day of that month, and subsequently to the last announcement of the names of Candidates, and also the names of those Candidates whose certificates have been resuspended as hereinafter provided, shall be announced by the Secretary from a list arranged in alphabetical order, without reference to the dates of the certificates of the Candidates; and these certificates shall remain suspended until the day of Election.

V. In the first week in February, a list shall be printed, containing the names of all the Candidates so announced at the first Meeting in January, arranged in alphabetical order, without reference to the dates of the certificates, together with the names of the Fellows by whom each Candidate is proposed and recommended; and a copy of such list shall immediately thereafter be sent to every Ordinary Fellow.

VI. The Council shall select by ballot from such printed list of Candidates a number not exceeding fifteen, to be recommended to the Society for Election; but no such selection by the Council shall be valid unless eleven Members at least be present and vote, a majority deciding, or in the event of equality the President having a second or casting vote.

VII. At the first Ordinary Meeting of the Society in March, the President shall read from the Chair the names of the Candidates whom the Council have selected as most eligible, arranged in alphabetical order; and after such Meeting, a circular letter shall be forthwith sent to every Fellow, naming the day and hour of Election, and enclosing a printed list of the selected Candidates, with space for such alterations as any Fellow may determine to make in pursuance of Statute IX of this Chapter.

VIII. The election of Ordinary Fellows not included in the privileged classes referred to in Statutes XII and XIII of this Chapter, shall take place on the first Thursday of May; unless the Council shall alter the day of Election to any other day in the month of May, in which case due notice of such alteration shall be given to every Ordinary Fellow.

IX. On the day of Election two Scrutators shall be nominated by the President, with the approbation of the Society, to assist the Secretaries in examining the lists; and each Fellow present and

voting, shall deliver to one of the Secretaries or Scrutators one of the printed lists mentioned in Statute VII of this Chapter, having erased the name of any Candidate or Candidates for whom he does not vote, and, if he shall have thought fit, having substituted or added the name of any other Candidate or Candidates contained in the printed list sent in pursuance of Statute V of this Chapter.

X. One of the Secretaries shall take down the names of the Fellows who vote, and the Scrutators, after examining the lists with the Secretaries, shall report to the President the names of the Candidates who shall have been duly elected in compliance with the Charters, and the President shall announce those names from the Chair.

XI. Any Candidate whose name shall have been printed in the last list of Candidates, but who shall not have been elected, shall, if his proposers, or any one of them, so request in writing, before the 31st December next ensuing, continue a Candidate; his name shall be placed in alphabetical order with those of the new Candidates to be announced in January following, and his certificate shall be suspended along with those of the new Candidates, and so on from year to year on such request being repeated, provided always that the same certificate shall not be suspended for more than five years. Any additional qualifications of a Candidate may be set forth in a supplementary certificate to be signed by not fewer than six Fellows.

XII. Any one of His Majesty's subjects who is a Prince of the Blood Royal may be proposed at one of the Ordinary Meetings of the Society by any Fellow, and may be put to the vote for Election on the same day, provided public notice of such proposition shall have been given by the proposer at the preceding Meeting of the Society.

XIII. In cases in which the Council is of opinion that, in the interests of the advancement of Natural Knowledge, it is desirable that persons be elected Fellows of the Society otherwise than as provided by Statutes III to XII of this Chapter, they may, once in every two years, recommend to the Society for election not more than two persons, who, in their opinion, either have rendered conspicuous service to the cause of science, or are such that their election would be of signal benefit to the Society. The persons so recommended shall be selected by the Council by ballot, in accordance with the procedure established by Standing Orders of Council. Provided always that no person shall be so recommended unless he obtains four-fifths of the votes of the Members present.

At the Ordinary Meeting of the Society next following the Meeting of Council at which such selection is made, the person or

persons nominated shall be proposed for election by means of a certificate prepared in accordance with Statute III of this Chapter, no distinction, however, being made between personal and general knowledge, and the ground on which the Candidate has been nominated by the Council, that is to say, whether as having rendered conspicuous service to the cause of science, or as such that his election would be of signal benefit to the Society, being alone stated as the qualification. Such certificate, on being allowed by the Society, shall be suspended in some convenient place in the apartments of the Society until the day on which a ballot is taken upon it. The date for the ballot, which shall not be earlier than the third Ordinary Meeting after that at which the certificate is read, shall be announced at the head of the certificate.

XIV. Every person who is elected a Fellow shall appear for his admission on or before the fourth Ordinary Meeting of the Society after the day of his Election, or within such further time as shall, for some sufficient cause, be granted by the Council; otherwise his election shall be void.

XV. The admission of any Fellow into the Society shall be at some Ordinary Meeting, in manner and form following, he having first made the payments required by the Statutes. Immediately after the reading of the Minutes has been concluded, he shall subscribe the Obligation in the Charter-book, and be introduced to the President, who, taking him by the hand, shall say these words: *I do, by the authority and in the name of the Royal Society of London, for improving natural knowledge, admit you a Fellow thereof.*

XVI. The Election, the payments made previous to admission, and the admission of every person into the Society, with the time thereof, shall be recorded in the Journal-book.

XVII. No person shall be deemed a Fellow of the Society until he has made the payments required by the Statutes: nor shall he be entitled to vote at any Election or Meeting of the Society until he shall have been admitted in the manner and form above specified.

XVIII. Persons may be elected into the Society, under the title of Foreign Members, who are neither natives nor inhabitants of His Majesty's dominions, and shall be exempted from the operation of Chapters II and III of these Statutes; they shall be selected from among men of the greatest eminence for their scientific discoveries and attainments.

XIX. The Council shall from time to time, as they shall see fit, put in nomination persons for Election as Foreign Members, not exceeding, with those already elected, the number of fifty.

XX. A book shall be kept in which Members of the Council may enter the names of those men of science whom they suggest as Foreign Members; each entry shall be signed by the proposer and be accompanied by a short statement of the principal grounds on which the suggestion is made, and shall be valid for three years only.

XXI. When vacancies are to be filled up, a list of the persons so entered shall be sent to each Member of the Council, together with notice of the Meeting at which the list will be considered. At the Meeting thus appointed further entries may be made, and the claims of those men of science whose names have been duly entered in the book shall be considered, and a selection of names shall be made, from among which the Council, at a subsequent Meeting to be then appointed, may make nominations to the Society.

XXII. At the second Meeting the selection of the Candidates to be nominated shall be by ballot; when, if two-thirds of the Members of the Council present be in favour of the nomination of any Candidate, his name shall be proposed at the next Ordinary Meeting of the Society, and shall be put to the vote at the following Ordinary Meeting.

CHAPTER II.

Of the Obligation to be Subscribed.

EVERY person elected a Fellow of the Society shall, before his admission, subscribe the Obligation in the following words:—

We who have hereunto subscribed, do hereby promise each for himself, that we will endeavour to promote the good of the Royal Society of London, for improving natural knowledge, and to pursue the ends for which the same was founded; that we will be present at the Meetings of the Society, as often as conveniently we can, especially at the Anniversary Elections, and upon extraordinary occasions; and that we will observe the Statutes and Orders of the said Society. Provided, that whensoever any of us shall signify to the President under his hand, that he desireth to withdraw from the Society, he shall be free from this Obligation for the future.

And if any person elected shall refuse to subscribe the said Obligation, the election of that person shall be void.

CHAPTER III.

Of the Payments to be made by the Fellows to the Society.

I. EVERY person elected a Fellow of the Society shall, before he is admitted, pay the sum of *ten pounds* for admission money, the sum of *four pounds* for the year of his election, and the same sum annually in advance so long as he shall continue a Fellow of the Society. And if any such person shall refuse or fail to pay the said sums, he shall not be admitted, and his Election shall be void: except the said sums be remitted in whole, or in part, by special order of the Council. Provided always that, except in the case of Fellows elected under Statutes XII and XIII of Chapter I, the admission fee of each Fellow shall be paid out of the Fee Reduction Fund, and shall not be demanded of the Fellow; and that, except in the case of Fellows elected under Statutes XII and XIII of Chapter I, and Fellows elected before January, 1879, *one pound* of the annual contribution shall be paid out of the Fee Reduction Fund.

II. All who have or may become Fellows of the Society may at any time compound for their annual payments, by paying at once the sum of *sixty pounds*.

III. All Annual Contributions shall be considered to be due on the 25th day of March in each year. Every Fellow of the Society liable to an Annual Payment shall (previously to the 25th day of March in every year) bring or send the same to the Treasurer or the Assistant Secretary. And if any such Fellow, after notice sent by post to his usual address, in May, and again in September, shall fail to pay the same before the first day of October in each year, his name shall be suspended in the public Meeting-room of the Society as being in arrear, and shall continue so suspended until the sum due be paid. And if any such Fellow shall fail to pay his subscription on or before the first day of November in each year, no satisfactory reason having been assigned to the President and Council for such non-payment, he shall cease to be a Fellow of the Society. Provided, nevertheless, that on a solicitation for readmission being addressed to the President and Council by an individual so circumstanced, within the space of one year following St. Andrew's Day, the case of the individual so soliciting shall be stated by the President from the Chair, at one of the Ordinary Meetings of the Society, and the question of his readmission be put to the vote at the next Ordinary Meeting of the Society.

CHAPTER IV.

Of the Death or Recess of any Fellow.

THE Death or Recess of any Fellow of the Society shall be recorded in the Journal-book of the Society, and the names of such persons announced from the Chair, at the Anniversary Meeting for electing the Council and Officers.

CHAPTER V.

Of the Causes and Form of Ejection.

I. If any Fellow of the Society shall contemptuously or contumaciously disobey the Statutes or Orders of the Society or Council ; or shall, by speaking, writing, or printing, publicly defame the Society ; or advisedly, maliciously, or dishonestly do anything to the damage, detriment, or dishonour thereof, he shall be ejected out of the Society.

II. Whensoever there shall appear to be cause for the ejection of any Fellow out of the Society, the subject shall be laid before the Council ; and if a majority of the Council shall, after due deliberation, determine by ballot to propose to the Society the ejection of the said Fellow, the President shall in that case, at some Ordinary Meeting of the Society, announce from the Chair such determination of the Council ; and at the Ordinary Meeting next after that at which the said announcement has been made, the Society shall proceed to determine the question ; and on its appearing that two-thirds of the Members present have voted for the ejection of the said Fellow, the President shall proceed to cancel his name in the Register, and at the same time pronounce him ejected in these words :—

I do, by the authority and in the name of the Royal Society of London, for improving natural knowledge, declare A. B. to be now ejected, and no longer a Fellow thereof.

And the ejection of every such person shall be then recorded in the Journal-book of the Society ; and his name, as ejected, be also read at the next Anniversary Meeting for Elections.

CHAPTER VI.

Of the Election of the Council and Officers.

I. AT the two Ordinary Meetings of the Society next preceding the day of the Anniversary Election, the President shall give notice

of the said Election ; and declare how much it imports the good of the Society, that such persons may be chosen into the Council, as are most likely to attend the Meetings and business of the Council, out of whom there may be made the best choice of a President and other Officers.

II. Every Fellow of the Society whose residence is known, shall have notice of the Anniversary Meeting for electing the Council and Officers for the year ensuing, by particular summons, which summons shall be sent to the place of residence of such Fellow, a week at the least before the day of Meeting, and shall be to this effect:—

*These are to give notice, that on the day of
the Council and Officers of the ROYAL SOCIETY are to be elected
for the year ensuing ; at which Election your presence is expected,
at of the clock in the precisely.*

III. The Council for the ensuing year, out of which shall be chosen the President, Treasurer, Principal Secretaries, and Foreign Secretary, shall consist of eleven Members of the existing Council, and of ten Fellows who are not Members of the existing Council.

IV. The President and Council shall, previous to the Anniversary Meeting, nominate, by ballot, eleven Members of the existing Council, and also ten Fellows, not Members of the existing Council, whom they recommend to the Society for Election into the Council for the ensuing year. The President and Council shall, also, in like manner, nominate by ballot, out of the proposed Council, the persons whom they recommend to the Society for election to the offices of President, Treasurer, Principal Secretaries, and Foreign Secretary for the ensuing year.

V. At the Ordinary Meeting of the Society preceding the Anniversary Meeting, the names of such persons so recommended for election as Council and Officers for the ensuing year shall be announced from the Chair.

VI. Lists, with the names of the Fellows recommended by the President and Council, and having a blank column opposite for such alterations as any Fellow may wish to make, shall be prepared for the use of the Fellows, one week before the day of Election.

VII. Two Scrutators shall be nominated by the President, with the approbation of the Society, to assist the Secretaries in examining the lists.

VIII. Each Fellow voting, shall deliver his list to one of the Secretaries or Scrutators; and the name of each Fellow who shall so deliver in his list shall be noted by one of the Secretaries.

IX. The Scrutators, after examining the lists with the Secretaries, shall report to the Society the names of those having the majority of votes for composing the Council, and filling the offices of President, Treasurer, Principal Secretaries, and Foreign Secretary; the names of which persons shall then be announced from the Chair.

X. For electing any Member of the Council, or any Officer to be elected by the Society, upon such vacancies as shall happen in the intervals of the Anniversary Elections, the summons for such Election, and the proceedings in it, shall be after the same manner as is directed for the Anniversary Election.

XI. Upon any vacancy of the President's place, occurring in the intervals of the Anniversary Elections, the Treasurer, or, in his absence, one of the Secretaries, shall cause the Council to be summoned for the Election of a new President: and the Council meeting thereupon in the usual place, or any eleven or more of them, shall proceed to the said Election, and not separate until the major part of them shall have agreed upon a new President.

CHAPTER VII.

Of the President.

I. THE business of the President shall be to preside at all the meetings, and regulate all the debates, of the Society, Council, and Committees; to state and put questions both in the affirmative and negative, according to the sense and intention of the meetings; to call for reports and accounts from Committees, and others; to check irregularities, and to keep all persons to order; to summon all Meetings of the Council, and Committee of Papers; and to execute, or see to the execution of, the Statutes of the Society.

II. The President shall take precedence of every Fellow of the Society, at their ordinary place of meeting; and also in all other places, where any number of the Fellows meet as a Society, Council, or Committee.

III. In the absence of the President, one of the Vice-Presidents shall act as his deputy, and may do, in the absence of the President, the same acts as the President himself could do if present.

CHAPTER VIII.

Of the Treasurer and his Accounts.

I. THE Treasurer, or some person appointed by him, shall receive for the use of the Society, all sums of money due or payable to the Society; and shall pay and disburse all sums due from or payable by the Society; and shall keep particular Accounts of all such receipts and payments.

II. Every sum of money payable on account of the Society, exceeding Ten Pounds, shall be paid only by order of the Council; but payments for rates or taxes, to any amount, may be made by the Treasurer, without any specific order of the Council for that purpose.

III. All sums of money, which there shall not be present occasion for expending, or otherwise disposing of to the use of the Society, shall be laid out in such Government or other securities as shall be approved of and directed by the Council.

IV. The Treasurer shall keep a yearly account of all such Fellows of the Society as pay the sum appointed as the composition in lieu of annual payments; and also of those who make the annual payments: and in this account shall be noted the times up to which the annual payments have been made, and the arrears due from each Fellow.

V. The Treasurer shall also keep a book of Cheque Receipts for annual payments, to be filled up with the name of the Fellow paying, the sum paid, and the time for which payment is made; these Receipts to be signed by the Treasurer, or by the Assistant Secretary receiving the money on the Treasurer's behalf, who, upon the delivery of the Receipt to the Fellow paying, is to enter upon that part of the Cheque which is left in the Book, the above particulars, and also the day of payment.

VI. The Treasurer shall demand, or cause to be demanded, all arrears of annual payments, as soon as convenient after the first day of May.

VII. The Accounts of the Treasurer shall be audited annually, a short time preceding the Anniversary Elections, by a Committee consisting of three Members of the Council, of whom the President or one of the Secretaries to be one; and of three Fellows of the Society not Members of the Council, who are to be nominated by the President, with the consent of the major part of the Fellows present,

given by ballot at one of the three next preceding weekly meetings ; any one or more of the said three Members of the Council, together with any one or more of the said three Fellows, shall be a Quorum of the said Committee : the Members of the said Committee who are of the Council shall make their Report to the Council held next after such audit, on or before the Anniversary Election ; and the Members of the said Committee who are not of the Council shall make their Report to the Society, upon the Meeting next before the Anniversary Election, or on the day of the said Election.

VIII. The Treasurer shall have the charge of the Title Deeds of the Society's Estates, the Policies of Insurance, and Securities.

IX. As soon after the Audit as may be, and before the Anniversary Meeting, the Treasurer shall cause an abstract of the Society's Accounts of the preceding year to be printed for the use of the Fellows.

CHAPTER IX.

Of the Secretaries.

I. THE Secretaries, or one of them, shall have inspection over the Assistant Secretary ; and shall give the Orders and Directions concerning the entering and writing of all minutes or matters in the Journal-books of the Society or Council, or any other Books of the Society ; and also concerning any orders or other writings for the use and service of the Society.

II. The Secretaries, or one of them, shall attend all meetings of the Society, Council, and Committee of Papers ; where, when the President has taken the Chair, one of the Secretaries shall read the minutes, orders, and entries of the preceding meeting ; and shall afterwards take minutes of the business and orders of the present meeting, to be entered by the Assistant Secretary in the respective books to which they relate.

III. At the meetings of the Society, Lists of the Presents made from time to time to the Society shall be laid on the Table, by one of the Secretaries, for the inspection of the Fellows ; and the thanks of the Society to the Donors shall be proposed from the Chair previously to the reading of the first Paper. One of the Secretaries shall give notice of any Candidate who stands proposed for election into the Society at that Meeting ; and the Secretaries shall read Letters and Papers presented to the Society, in such manner as the President shall direct.

IV. The Secretaries shall draw up all letters to be written to any persons in the name of the Society or Council (to be read and approved of in some meeting of either respectively), except, for some particular cause or consideration, some other person be appointed by the Society or Council to draw up any such letter. They shall likewise have the charge (under the direction of the Committee of Papers) of printing the *Philosophical Transactions*, the *Proceedings*, and other Publications of the Society.

V. The letters relating to the business of the Society, received during each Session, shall be arranged and kept in the apartments of the Society.

VI. The duty of the Secretary for Foreign Correspondence shall be to receive and answer all letters from foreign parts relating to the business of the Society, to return thanks for Presents from Foreigners made to the Society, and to forward to persons elected Foreign Members the Diplomas certifying their election into the Society.

CHAPTER X.

Of the Assistant Secretary.

I. THE person who shall be chosen to the office of Assistant Secretary, shall either not be a Fellow of the Society; or, if a Fellow, shall cease to be so upon his election to and acceptance of that office.

II. The appointment of a person to the office of Assistant Secretary shall be by the Council, to whom the Officer so appointed shall give security, at the discretion of the Council; and he shall reside in the Society's House.

III. The Assistant Secretary shall be paid for his services according to the determination of the Council; and shall not, besides such payments, receive any perquisite or profit whatsoever without the express permission of the President and Council. He shall be subject to such Rules and Orders as shall from time to time be made or given by the President and Council; and he shall constantly be in attendance during all meetings of the Society, Council, and Committees.

IV. He shall enter all the Minutes in the several Journal-books, and make an Index to every such book: he shall lay before every Council their fair Minute-book: and before every Committee of

Papers, the Society's Journal-book, to show that the several entries are fairly made: and he shall have the care of the writing of all Summonses of the Society, Council, and Committees.

V. He shall, under the direction of the Secretaries, have the charge and custody of the Charter-book, Statute-book, Journal-books of the Society and Council, Register-books, and Letter-books, as also of all Papers and Writings belonging to the Society; all which shall be kept in the House of the Society, that they may be in readiness to be produced at any meetings of the Society or Council, as the case may require, or as shall be ordered by the Society, Council or President.

VI. He shall not suffer any person, not being a Fellow of the Society, to read any Journal-book, Record, or Writing, or any part thereof, belonging to the Society; nor give any copy thereof, nor in any way communicate anything contained therein, to any such person.

VII. He shall follow the directions which may be given him from time to time by the Treasurer in respect of that part of his duties which relates to the Accounts or Cash Transactions of the Society. He shall enter in a book, to be provided by the Treasurer, all such sums as he may receive on account of the Society at the instant of receiving such sums; and for these sums, so entered by him, he shall be answerable, until he shall have paid them to the Treasurer.

VIII. He shall attend the Library at such hours as shall be appointed for him for the accommodation of such Fellows of the Society as shall come to read the printed books or manuscripts, and of any other person who shall be introduced by a Fellow, either personally or by letter.

IX. He shall mark with the stamp of the Society all books accepted or bought by the Society.

CHAPTER XI.

Of the Meetings of the Society.

I. THE Session of the Society shall commence on the third Thursday in November, and end on the third Thursday in June.

II. The Ordinary Meetings of the Society shall be on Thursdays weekly (excepting Christmas, Passion, Easter, and Whitsun weeks, and such other weeks at Christmas and Easter, in each year, as the

Council may in the preceding year determine, and also Ascension Day), and shall begin at half-past Four o'clock in the Afternoon precisely.

III. No stranger shall be permitted to be present during the Meeting, unless by invitation of the President, or by his leave or order upon the recommendation of some Fellow.

IV. The business of the Society in their Ordinary Meetings shall be to order, take account, consider, and discourse of philosophical experiments and observations; to read, hear, and discourse upon letters, reports, and other papers containing philosophical matters; as also to view, and discourse upon, rarities of nature and art: and thereupon to consider, what may be deduced from them, or any of them; and how far they, or any of them, may be improved for use or discovery.*

V. No letter, report, or other paper shall be read at any Ordinary Meeting unless it be communicated by a Fellow or Foreign Member; and it shall be the duty of each Fellow or Foreign Member to satisfy himself that any letter, report, or other paper which he may communicate, is suitable to be read before the Society.

VI. The conduct of the Ordinary Meetings shall be in accordance with the Standing Orders determined from time to time by the President and Council, provided always that at the Ordinary Meetings nothing relating to Statutes or management of the Society shall be brought forward or discussed.

VII. The Anniversary Meeting for the election of the Council and Officers, and the Annual Meeting for the election of Fellows, shall take place at an hour to be determined by the Council.

CHAPTER XII.

Of Special General Meetings of the Society.

I. THE President or Council may at any time call a Special General Meeting of the Society when it may appear to them to be necessary.

II. Any six Fellows may, by notice in writing, signed by them, and delivered to one of the Secretaries at an Ordinary Meeting of the Society, require a Special General Meeting of the Society to be convened, for the purpose of considering and determining on the matters

* This is the wording of the Statute as given in the Statutes of 1663.

specified in such requisition, and the Council shall, within one week after such requisition shall have been so delivered, appoint a day for a Special General Meeting accordingly.

III. One week's notice of any Special General Meeting shall be given to each Fellow resident in the United Kingdom, and such notice shall state the object of such Meeting.

IV. At such Meeting no business shall be brought forward except what shall have been so notified.

CHAPTER XIII.

Of the Publication of Papers.

I. THE Members of the Council for the time being shall constitute and be a standing Committee, to be called the Committee of Papers, to whom the consideration of the acceptance, reading, and publication of all papers communicated to the Society shall be referred, and who shall execute their powers in accordance with Standing Orders determined from time to time by the President and Council.

II. The Committee of Papers shall meet at such times as shall be appointed by the President; due and sufficient notice of such meeting having been previously sent to every Member of the Committee.

The publication of papers communicated to the Society, and of such other matters as the President and Council may judge fit to publish, shall take place under Standing Orders determined from time to time by the President and Council, but always in such a way that a proper portion of them shall from time to time be printed and published under the title of the 'Philosophical Transactions of the Royal Society of London,' and another proper portion under the title of the 'Proceedings of the Royal Society of London,' provided always that the President and Council shall have power to publish either papers or other matter in such form and under such conditions as they may from time to time determine.

III. At a meeting of the said Committee no less number than seven of the Members (of which number the President, or, in his absence, a Vice-President, shall always be one) shall be a quorum.

IV. The decisions of the Committee of Papers shall be determined by the majority of votes of those present and voting, and the voting shall be open, unless the President shall direct that the voting

shall be by ballot. In case of an equality of votes, the President shall have a second or casting vote.

The decisions of the Committee shall be duly entered in the Minute-book of the Committee.

V. The *Philosophical Transactions* and the *Proceedings* shall be printed at the sole charge, and for the use and benefit, of the Society, and of the Fellows thereof; to the intent that each of the present Fellows, who actually contributes and pays towards the support of the Society, or who has compounded for such contribution, according to the rules and orders established in relation thereto, or who has for other particular reasons been exonerated and discharged from such contribution by order of the Council, may receive *gratis* (but under proper limitations and restrictions) one copy of such of the *Philosophical Transactions* and of the *Proceedings* as shall be printed as aforesaid; and that all persons who shall hereafter be admitted Fellows shall, under the same conditions, receive, and be entitled to, the like benefit and advantage.

VI. The Assistant Secretary shall deliver *gratis* one of the said copies of the *Transactions* to every Fellow of the Society (except as hereinafter excepted) who shall demand the same, either in person, or by letter.

Provided always, that no Fellow whatsoever of the Society shall be entitled to demand or receive any such copy of the *Transactions*, whose election and payment of Admission fees and regular Contributions shall not have preceded the date of the time appointed for the delivery of the said *Transactions*; neither shall the Executor of any deceased Fellow receive a copy of the *Transactions* published after the death of such Fellow.

Provided also, that no Fellow of the Society shall receive, or be entitled to receive, *gratis*, any copy or copies of the *Transactions*, so printed as aforesaid, after five years shall have elapsed from the time of the Assistant Secretary's having begun to deliver out such copies respectively; but his neglecting to demand them for so long a time shall be deemed a forfeiture and dereliction of his right thereto: unless the Council for the time being, upon being made acquainted with the reason of such delay, and having regard to the circumstances of the application, and the amount of stock in hand, shall order such copies as they may think fit to be so delivered.

VII. The Assistant Secretary shall further cause to be distributed *gratis* to all the Fellows of the Society, by post or otherwise, copies of the *Proceedings* as soon as may be convenient after their appearance.

VIII. If the number of copies of *Transactions* and *Proceedings* so to be printed shall be greater than what will be requisite to supply each of the Fellows with one copy, such supernumerary copies shall be disposed of at such times, and in such manner, as the Council shall direct.

CHAPTER XIV.

Of the Books and Papers of the Society.

I. THERE shall be had and kept a Book, called the *Charter-book*, wherein shall be fairly written the copy of the Charters, all the Royal Grants on the behalf of the Society, and the Obligation to be subscribed by the Fellows of the Society in their own hand-writing.

II. There shall be kept a Book, called the *Statute-book*, wherein shall be fairly written, or printed, all the Laws, Statutes, and Constitutions made, or to be made, concerning the government and regulating of the Society or Council; and also a Register of the Fellows of the Society, with the times of their Election and Admission.

III. There shall be kept *Journal-books** of the Society, and also of the Council, wherein shall be entered all the minutes, orders, and business of the Society and Council at their respective meetings; to which *Journal-books* any Fellow may have access at such times as the Library is open.

IV. A Book shall be kept, in which the title of each communication received, the date of its reception at the apartments of the Society, and the name of the Fellow or Foreign Member who communicates it, shall be duly entered in the order of its reception.

V. The original copy of every Paper received at the Society shall be considered the property of the Society, if there be no previous engagement with its author to the contrary; but any author may withdraw a paper which has been received but not read; or may, by leave of the Council, have a copy of his paper; and it shall be in the power of the Council, if they think fit, to return to any author such drawings or other illustrations accompanying any paper communicated by him or on his behalf, which he may ask in writing to be returned to him.

* "The words 'Journal-books' do not include the Minute-books of the Government Grant Committee or those of the Government Grant Boards."—*Minute of Council, May 24, 1894.*

VI. All the Papers not withdrawn by leave of the Council, and read at the Society, shall be delivered to the Committee of Papers; and all Papers which have not been printed in the *Transactions* or *Proceedings* shall be preserved in the archives of the Society for future inspection; and shall never be lent out of the Society's House without Order of the Council.

VII. The Library shall be open to the Fellows every week-day (exclusive of Good Friday and Easter-eve, of Easter week, of a week at Whitsuntide, and of a week at Christmas), from 11 A.M. to 6 P.M., except on Saturdays, when it shall be open from Eleven in the morning to One in the afternoon; but during the months of August and September it shall be closed on week-days, other than Saturdays, at 4 p.m.

VIII. Any Fellow may have the loan of any of the printed Books of the Society, excepting such as the Council shall order not to be taken out of the Library; but he shall not be allowed to have in his possession more than ten volumes at a time. The loan of Manuscripts is exclusively vested in the President and Council.

IX. A list of all Books and Manuscripts borrowed from the Library of the Royal Society, and of the Fellows of the Society to whom they are lent, shall be kept in the Library.

X. All Books whatsoever belonging to the Society shall be returned at a time to be specified by the Council, in each year; and the Library shall be closed for one month after such time, or for such shorter periods as the Council may direct.

XI. The value of such Books in the possession of any Fellow as are not returned to the Library pursuant to the preceding Statute, shall be required to be paid by the person who has so detained them.

CHAPTER XV.

Of the Common Seal and Deeds.

I. THE Common Seal of the Society shall be kept in a box, the key of which shall be kept in a sealed packet. When the Common Seal has to be used, this packet shall be opened by the President in Council; and at the Council meeting at which it is so opened, the Common Seal having been replaced in the box, and the box locked, the key shall again be enclosed in a packet, which shall be sealed by

the President with his private seal. The box and sealed packet shall be kept at the Society's chambers in an iron safe.

II. Every Deed or writing, to which the Common Seal is to be affixed, shall be passed and sealed in Council.

CHAPTER XVI.

Of the Restraint of Dividends to Fellows.

THE Society shall not, and by its laws may not, make any Dividend, Gift, Division, or Bonus in Money unto or between any of its Members.

CHAPTER XVII.

Of the Making and Repealing of Laws.

I. FOR the making of any Law or Statute of the Royal Society, the draught thereof shall be read in Council, and put to the vote, on two several days of their meeting. The first day the question to be resolved by vote shall be to this effect, viz., "Whether the draught of the said Statute, then agreed upon, shall be read at another meeting?" The second day the question shall be to this effect, viz., "Whether the draught of the said Statute, then agreed upon, shall pass for a Law, or not?"

II. For the repealing of any Law or Statute, or any part thereof, the Repeal shall be proposed and voted in Council on two several days of their meeting. The first day the question to be resolved by Ballot shall be to this effect, viz., "Whether the Repeal of such a Statute, or such part thereof, shall be proposed at another meeting?" The second day the question shall be to this effect, viz., "Whether such a Statute, or such part thereof, shall be repealed, or not?" And in case the said Repeal be agreed unto, the same shall be recorded in the Journal-book of the Council; and the Statute, or part of the Statute, repealed, shall be cancelled in the Statute-book.

STANDING ORDERS OF COUNCIL RELATING TO MEETINGS, SECTIONAL COMMITTEES, AND PUBLICATIONS.

(As amended Feb. 16th, 1899.)

NOTE.

By Statute 1, Cap. XIII, the consideration of the acceptance, reading, and publication of all papers communicated to the Society is referred to the Council sitting as Committee of Papers; and in the following Standing Orders the word "Council," when used in connection with the acceptance, reading, or publication of papers, is to be understood to mean the Council sitting as Committee of Papers.

I.

Relating to the Conduct of Ordinary Meetings.

1. At each Ordinary Meeting, any formal business of the Society which may be necessary, such as the reading of certificates, balloting for candidates under Statutes, Cap. I, announcements, returning thanks for presents, &c., shall, unless the President direct otherwise, be the first business of the meeting.

2. At each Ordinary Meeting, not being "a Meeting for Discussion," as hereinafter provided, or for the Bakerian or the Croonian Lecture, the President shall determine what papers are to be read, and the order in which they shall be taken. He may also, whenever he sees fit, direct the author of a paper or one of the Secretaries to read an abstract of the paper or the paper itself, if it be sufficiently brief, or may invite the author to make an oral statement of the nature of its contents, and may also invite remarks upon the paper. When an oral statement is desired, the author shall, so far as possible, be previously informed of the fact. A paper shall be considered to have been "read" if one of the Secretaries has read its title only.

3. At any Ordinary Meeting, not being a "Meeting for Discussion," any Fellow of the Society may, with the approval of the President, and at such period of the Meeting as the President may determine, make a communication not of the nature of a "paper," or exhibit objects having relation to the advancement of Natural Knowledge.

4. The President shall further have power at any Ordinary Meeting, and at any period of that Meeting which he may think proper, to make such announcements or statements, as he may think desirable, relating to the advancement of Natural Knowledge.

5. In each year certain Ordinary Meetings, not more than four in number (exclusive of the Meetings set aside for the Bakerian and Croonian Lectures respectively), shall be devoted each to the hearing and consideration of some one important communication, or to the discussion of some important topic; these Meetings shall be termed "Meetings for Discussion."

6. The Council shall from time to time give due notice of the dates at which Meetings for Discussion will be held.

7. The Council, of its own motion, or upon the recommendation of a Sectional Committee, may select some communication made to the Society in the ordinary way, as the subject for such a Meeting for Discussion, or it may select for that purpose some question, the discussion of which would, in their judgment, be likely to advance Natural Knowledge. In the latter case, the Council shall appoint some person to open the discussion by means of a communication made by him for that purpose.

8. When a Meeting for Discussion has been arranged, the Council, or the Officers, shall direct printed copies of the communication which has been approved of for the said Meeting (or of an adequate abstract of it), to be sent not later than one week before the date of the Meeting, to each Fellow, or to certain Fellows of the Society, and to such other persons as the President may direct. And the Council shall take such other steps as may seem to it desirable to render the discussion useful towards the advancement of Natural Knowledge.

9. At each Meeting for Discussion, the conduct of the discussion shall be under the direction of the President, who shall arrange for the Fellows present and desiring to speak, and who shall have the power to invite, if he think fit, persons present, not Fellows of the Society, to take part in the discussion. Any Fellow shall be at liberty to send to the Secretaries, previous to the Meeting, written remarks on the communication which is the subject of the meeting, and the President shall, if he see fit, direct one or other of the Secretaries to read these remarks at the meeting.

II.

Relating to Sectional Committees.

10. The Council shall appoint, from among the Fellows of the Society, Committees representing the several branches of Natural Knowledge, and called "Sectional Committees." The Members of

each Committee shall be chosen with a view to secure, so far as is possible, a representation of the several sub-divisions of each branch of Natural Knowledge, and to obtain the assistance of Fellows who, from their connection with other societies, and otherwise, are specially qualified to advise the Council in respect to particular parts of Natural Knowledge.

11. It shall be the business of each Sectional Committee to advise the Council (whether sitting as the Committee of Papers or otherwise) or the Officers upon matters referred to it by the Council or by the Officers, and otherwise to make to the Council such suggestions as it may think desirable touching the branch or branches of Natural Knowledge which it represents, it being understood that no Sectional Committee shall offer advice to the Council as to the selection of candidates for admission into the Society as Fellows or Foreign Members, or as to the awards of Medals, unless the Council shall have asked for such advice.

12. The Council shall each year appoint a Member of each Committee to serve as Chairman of that Committee, and to be the channel of communication between the Committee and the Council or Officers.*

13. The Sectional Committees shall be six in number, viz. :—

- (1) A "Mathematics" Committee for Mathematics, Mathematical Physics, Crystallography, and Mathematical Astronomy.
- (2) A "Physics and Chemistry" Committee for Experimental Physics, Observational Astronomy, Meteorology, Chemistry, and Metallurgy.
- (3) A "Geology" Committee for Geology, Palæontology, Mineralogy, and Geography.
- (4) A "Botany" Committee for Botany.
- (5) A "Zoology" Committee for Zoology and Comparative Anatomy.
- (6) A "Physiology" Committee for (Animal) Physiology and Medical Subjects.

14. The "Mathematics" Committee shall consist of six Members, of whom two shall retire each year; three Members shall form a quorum.

The "Physics and Chemistry" Committee shall consist of twelve Members, of whom four shall retire each year; five Members shall form a quorum.

* By a resolution of Council of July, 1897, the Chairman of a Sectional Committee is authorised to appoint one of the Committee his Deputy when necessary.

The "Geology" Committee shall consist of nine Members, of whom three shall retire each year; four Members shall form a quorum.

The "Botany" Committee shall consist of nine Members, of whom three shall retire each year; four members shall form a quorum.

The "Zoology" Committee shall consist of nine Members, of whom three shall retire each year; four members shall form a quorum.

The "Physiology" Committee shall consist of twelve Members, of whom four shall retire each year; five members shall form a quorum.

15. Any Member of Council who desires to attend the meetings of any Sectional Committee, of which he is not at the time being a Member, shall have power to do so as *amicus curiæ* under the following conditions. Upon his expressing in writing to the Assistant Secretary his wish so to attend, the summons for each meeting of the Committee shall be sent to him as to an ordinary Member of the Committee during his tenure of office as Member of Council, or during such shorter time as he may name; but the Chairman of the Committee shall not be expected to correspond with him as with an ordinary Member of Committee. He may with the consent of the Chairman speak during the deliberations of the Committee, but shall give no vote.

16. It shall be in the power of the Council to add to the number of any Committee, if at any time it may seem to be desirable to do so.

(The following Standing Orders, 17—28, are the same for each Sectional Committee.)

17. The retirement of Members shall be determined by seniority.

18. The retiring Members of the Committee shall each year vacate office on the 31st of December, and shall not be eligible for election for the ensuing year.

19. Should, by reason of death or otherwise, a vacancy occur at any intermediate time, the Council shall appoint a person to fill the vacancy, and the retirement of the person so appointed shall be according to the rules which would have applied to the Member whose place he fills, provided that, if at the date of retirement the said person has not served more than one year, he shall be eligible for immediate re-appointment.

20. The appointment of the Fellows to serve as new Members of Committee shall be made by the Council in December, and the Members so appointed shall enter office upon the 1st of January ensuing.

21. The Committee shall, when necessary, meet in the apartments of the Society at some convenient hour on the second Thursday in each month from October to July, both included, or at such other times and places as the Chairman may determine.

22. The summonses for a meeting shall be issued by the Assistant Secretary at the direction of the Chairman.

23. The decisions arrived at by a meeting of a Committee at which the Members present do not form a quorum shall be valid, if subsequently agreed to in writing by not less than two-thirds of the whole Committee.

24. Voting shall be open, unless any Member of the Committee shall demand the ballot. The Chairman shall have a second or casting vote.

25. The Minutes of the Committee shall be duly recorded in a book kept for that purpose, and preserved in the apartments of the Society, or in the custody of the Chairman, together with such correspondence and documents relating to the business of the Committee as the Committee may think it desirable to preserve.

26. The Committee shall make to the Council, through its Chairman, who shall be provided by the Society with such clerky assistance as he may need, reports to the Council, answers to inquiries of the Council, and such suggestions as the Committee may think desirable. The minutes of the Committee shall be laid before the Council whenever the Council shall so demand.

27. When a Committee is of opinion that a paper referred to it might profitably serve as the basis of a discussion at a meeting of the Society, it shall forthwith report to that effect to the Council. If the matter seem urgent, the President and Officers shall have power, without waiting for a Meeting of the Council, to take immediate steps towards carrying out the recommendations of the Committee.

28. Should, at any time, a Committee be of opinion that it would be desirable to encourage a discussion at a meeting of the Society upon some subject, concerning which no paper suitable to serve as a basis for discussion is under its consideration, and have ascertained that some person is willing to prepare a suitable paper for that purpose, the Committee, having approved of the said paper, shall recommend it to the Council, to be treated as the basis of a discussion to be held at some convenient meeting.

III.

Relating to the Acceptance, Reading, and Publication of Papers.

29. Upon a communicated paper reaching the apartments of the Society, the Assistant Secretary shall mark on it the date of the

reception, shall record the reception in the book kept for that and other purposes relating to papers received, and shall report the reception to the one or the other of the two Secretaries, according to the nature of the communication.

30. The Secretary to whom the paper is thus reported shall, if he sees fit, of himself, or after consultation with the other Officers or with the Chairman of the appropriate Sectional Committee, direct the paper to be marked as "accepted for consideration," otherwise he shall refer the question of acceptance for consideration to the appropriate Chairman of Sectional Committee, who shall at a meeting of his Committee, or by correspondence with its Members, obtain the view of the Committee thereupon, and report the same to the Secretary, who shall act on the advice so given.

31. In the case of a paper not being accepted for consideration, the Fellow communicating the paper shall be informed thereof, but the paper itself shall remain the property of the Society, provided always that such Fellow may, with the consent of the Council, withdraw the said paper, upon the understanding expressed in writing that the paper is to be regarded as not having been communicated to the Society at all.

As to the 'Proceedings.'

32. In the case of a paper being accepted for consideration, the author shall be required to furnish, if he has not already done so, a short account of the main points of the paper, hereinafter called an "abstract," of such length and nature as shall be approved of by the Secretaries; provided that if the paper do not exceed in length about twelve pages of the 'Proceedings' (such a paper being hereinafter called a "short" paper), an abstract of it shall not be required.

33. In the case of a paper accepted for consideration, and of which when required an abstract has been furnished, the Secretaries shall proceed to make arrangements for the reading of the paper, and shall, if they think fit, of themselves, or after consultation with the Chairman of the appropriate Sectional Committee, mark the abstract or short paper as suitable for publication in the 'Proceedings'; otherwise they shall refer the question of publication of the abstract, or in the case of a short paper, of the paper itself, to the Chairman of the appropriate Sectional Committee, who shall, either at a meeting of the Committee, or by correspondence with its Members, obtain the view of the Committee thereupon, and report the same to the Secretaries, who shall act upon the advice so given.

34. In all cases where the Secretaries have, as regards the acceptance or reading of any paper, or the publication of any abstract or

paper, acted under Standing Order 30, or 33, of themselves, or after consultation with a Chairman of Committee only, the Committee itself not having been formally consulted in the matter, such action shall be reported to the Committee.

35. When a paper has been accepted for consideration, and appointed to be read, the author shall be informed of the meeting at which it is appointed to be read, and shall be supplied with a copy of Standing Order 2. In cases where the President or Secretaries, after consultation (if they see fit) with the appropriate Sectional Committee or its Chairman, are of opinion that at the meeting the author of the paper should be invited to make an oral statement, or that the abstract (or short paper) prepared for publication in the 'Proceedings' should be read, the author shall be informed of the fact, and be invited to be present.

36. Abstracts of papers, or short papers in full, which have been marked as suitable for publication in the 'Proceedings,' shall be set up in type without delay, and proofs submitted to authors for correction.

37. The 'Proceedings' of the Royal Society shall be published in numbers which shall be issued at as short intervals as may be found suitable, and shall contain :—

- i. In reference to each meeting, a record of the formal business conducted at the meeting, the titles of the papers read at the meeting, and such an account of other communications made at the meeting or of other proceedings, not of the nature of business or of discussions on the papers read, as the President and Officers may judge it desirable to insert.
- ii. Such abstracts of papers or such short papers ordered for publication in the 'Proceedings,' as may be ready to be published.
- iii. Such papers, not of the nature of short papers, or such other matter as the Council may, in special cases, order to be published in the 'Proceedings.'

38. The Secretaries shall take what means they may think proper to secure that the account given in the 'Proceedings' of any communication made at a meeting besides the papers read, or of anything which occurred and seemed worthy of being recorded, shall be accurate; and if, from anything which takes place at a meeting, they should have reason to think that the Sectional Committee might wish, in respect to any paper, to reconsider the recommendation that it should be published, they shall have power to postpone the publication of that abstract or paper, and refer the abstract or paper once more to the Sectional Committee.

39. The account given in the 'Proceedings' of a "Meeting for Discussion" shall contain the communication made for the purpose of

opening the discussion (Standing Order 7), as well as such contributions to the discussion received in writing previous to meeting (Standing Order 9) as the respective authors may desire to see so published, provided always that all such communications are subject to the General Standing Orders relating to the publication of papers in the 'Proceedings.' There shall be no report of the discussion itself.

As to the 'Philosophical Transactions.'

40. Every paper communicated to the Society, and accepted for consideration, shall be referred by the Secretaries to the appropriate Sectional Committee through the Chairman of that Committee, provided always that, for the better expedition of the business of the Society, the Secretaries, as provided above (Standing Orders 33 and 36), shall have power, in the case of short papers, to proceed with the reading and publication of a paper previous to its having been considered by a Committee. If the said Chairman is of opinion that the subject of the paper does not lie within the scope of his Committee, he shall report the same to the Secretaries, who shall refer the paper to some other Sectional Committee. Should the Secretaries be of opinion that a paper pertains by its subject to more than one Sectional Committee they shall take steps in order that the judgment of the several Committees concerned may be obtained. In the case of any difficulty as to the reference of a paper to its appropriate Sectional Committee or Committees, the Secretaries shall bring the matter before the Council.

41. The Chairman through whom the paper is referred shall bring the paper under the consideration of his Committee at the next regular meeting of the Committee, or at some earlier meeting which he may think it desirable to call, having in the meanwhile, if he and one or other of the Secretaries judge it desirable, submitted the paper to one or more Members of the Committee, or Fellows of the Society not Members of the Committee, whose opinion or opinions he shall report to the Committee.

The Sectional Committee, for its guidance in judging a paper so brought before it, shall obtain from at least two persons—who are knowing and well skilled in the particular branch of Natural Knowledge to which the said paper relates, and who may or may not be Members of the Committee, but, unless there be special reasons to the contrary, must be Fellows of the Society—acting as referees, opinions in writing upon the following points, viz. :—

- i. Whether the paper should or should not be published in the 'Philosophical Transactions' ;
- ii. Whether, in the former case, it should be published in full or in part only, the part so to be published being indicated ;

- iii. Whether any modifications are necessary or desirable, and, if so, of what nature;
- iv. Which illustrations (if any) accompanying the paper should be reproduced.

Having obtained and considered such written opinions, and having, if it see fit, consulted another Sectional Committee or others of the Sectional Committees, and having at a meeting (in accordance with Standing Orders 23, 24) decided upon the above points, it shall embody its decisions, together with any other recommendations which it may think fit to make in reference to the paper, in a Report to the Council, signed by the Chairman, to which Report shall be appended, for inspection by the Council, the written opinions of the Referees.

42. The Sectional Committee, in thus deciding upon a paper, shall be guided by the principle that such a paper only should be recommended for the 'Philosophical Transactions' as appears to mark a distinct step in the advancement of Natural Knowledge.

43. If the Council approves of the Report of the Sectional Committee, the Secretaries shall immediately take action with regard to the publication of the paper, in accordance with the Report. If the Council does not approve of the report of the Sectional Committee, it shall request the Sectional Committee to reconsider its recommendations, and shall not come to a decision until it has received the further report of the Sectional Committee. But, for the better expedition of the business of the Society, the Secretaries, in such cases as they judge fit, shall have power to take steps with regard to the publication of a paper in the 'Philosophical Transactions,' in accordance with the decision of a Sectional Committee, previous to that decision having been brought before the Council; and they shall also have power, in cases in which they and the Chairman of the appropriate Sectional Committee agree in thinking it desirable, to take such steps as they may think fit with regard to the publication of a paper in the 'Philosophical Transactions,' previous to a formal decision of the said Committee upon the paper having been taken.

44. In the case of the Chairman of a Sectional Committee being the author of a paper referred to that Committee, the Secretaries shall have power, in consultation with some member or members of the Committee, other than the Chairman, to take the same action as under the foregoing Standing Orders they are empowered to take in consultation with the Chairman.

45. Each paper ordered for publication in the 'Philosophical Transactions' by the Council shall be published separately in paper covers, the date at which it is issued being marked on the cover, and shall be sold separately.

46. The several papers shall also be issued bound in two series—A, containing those papers which are of a mathematical or physical character, and B, containing those of a biological character—at intervals, so far as possible regular, and of not too great a length; no paper being kept back more than six months from the date of its publication as a separate paper.

47. In the case of communications received in the Christmas, the Easter, or the Midsummer recess, the Secretaries shall have power, with the approval of the Chairman or Chairmen of the appropriate Sectional Committee or Committees, to issue a number or numbers of the 'Proceedings' containing such communications, without waiting for their being read at a meeting of the Society.

48. When the Council or the Society has appointed a person, or two or more persons acting as Committee, to carry out a particular inquiry, and the person or Committee has presented a report giving an account of such inquiry, the Council, having consulted the appropriate Sectional Committee or Committees in the usual way as in the case of a paper presented, shall direct the report, if deemed worthy of publication, to be published either in the 'Proceedings,' as a separate number if this should seem convenient, or in the 'Transactions,' according as the one or the other may seem the more suitable for the purpose.

49. A Year-book of the Society shall be published annually, so soon after the Anniversary Meeting as shall be convenient.

IV.

RELATING TO THE COMMITTEE OF PAPERS.

50. The Minutes of the Council sitting as Committee of Papers shall be kept separately from the ordinary Minutes of Council.

51. At each meeting of the Committee, the Secretary shall lay before the Committee a statement of the papers under consideration, showing briefly in the case of each paper the action which has been taken in regard to it, and the recommendations which may have been made concerning it by a Sectional Committee, together with, in the case of a paper recommended for publication in the 'Philosophical Transactions,' an approximate estimate of the cost of publication. Such a statement, or so much of it as is possible, shall be printed and distributed to the Members of the Committee previous to the meeting.

52. At each Meeting of the Committee the written decisions of the Sectional Committees, and the reports of referees, which may have been made in respect to papers mentioned in the Statement, shall be laid upon the table.

53. The Committee may, if it see fit, adopt *en bloc* all the recommendations contained in a Statement, provided always that if any Member of the Committee, either personally or, if absent, by writing, object to any particular recommendation or recommendations, such recommendation or recommendations shall be considered separately, the remainder being treated *en bloc*.

54. The decisions of the Committee on all questions before it shall be by the majority of those present and voting, the voting being open unless any member demand a ballot, in which case the voting shall be by ballot.

EXPLANATORY NOTES ON THE PROCEDURE RELATING TO THE READING AND PUBLICATION OF PAPERS.

1. No paper is received by the Society unless it be communicated by a Fellow. A Fellow, in communicating a paper, is required by Statute to ascertain that the paper is a fit and proper one to be communicated; he should satisfy himself not only that the paper is by its nature so fit, but also that it has not previously been published elsewhere.

A Fellow, in communicating a paper, should state whether he (or the author) desires that it should be published in the 'Proceedings' or in the 'Transactions.' In the former case, the Fellow communicating should see that the paper does not exceed in length about twelve pages of 'Proceedings,' and is not accompanied by elaborate illustrations; in the latter case, a short abstract of the main points of the communication must accompany the full paper. Since the MS. of a communication received and read, but not published by the Society, is retained in the possession of the Society,* an author is recommended not to send in the sole copy of his MS.; and it is advisable that the copy sent to the Society should be type-written, and, if possible, on a foolscap page.

It will be also convenient if, at the time of sending in the paper, the Assistant Secretary is informed what days of meeting will best suit the author for the reading, supposing it be decided that the paper should be read, and whether he wishes to be present, and whether he is prepared to illustrate the reading of the paper by experiments, projection slides, diagrams, &c. The Society cannot, however, undertake always to fix the reading of the paper on the day or even one of the days proposed by the author.

* While retaining a MS. not ordered for publication, the Council are generally willing to return to the author drawings, &c., illustrating the paper.

2. When a communication has been "received," the first decision taken with regard to it is whether it should be "accepted for consideration." (Standing Order 30.)

If it be not accepted for consideration, the Fellow communicating the paper is informed of this, and he may, under certain conditions, withdraw the paper. (Standing Order 31.)

3. If it be accepted, the next decision relates to the reading of the paper.

According to the nature of the paper, and according to circumstances, the reading may consist of the title only being read by one of the Secretaries, or the paper may be read in whole or in part by one of the Secretaries, or the author may be invited to give an oral exposition of the contents of his paper, with such experimental or other illustrations as he may desire.

A decision having been come to as to the date of the reading, this will be communicated to the author, who, according to the decision taken, will be invited to be present, and may be requested to give an oral exposition.

4. When a paper has been judged suitable for publication in the Proceedings, it is without delay set up in type, so that, if possible, printed copies may be in the hands of Fellows at the meeting at which the paper is read. A proof of the paper is sent to the author with the request that he will revise the proof as carefully as possible, and return it to the Assistant Secretary as soon as possible.

It may be found desirable to set up in type and even distribute at a meeting a paper which has been marked for reading, but about the publication of which no decision has as yet been come to. Hence, receipt of the proof must not be considered by the author as an indication that the paper will certainly be published.

5. If the author, in revising the proof thus sent to him, be led to make other than verbal or unimportant corrections, or to make additions, he must, in view of the publication of the paper, carefully date all such important corrections or additions. Any such corrections or additions introduced into any subsequent revise of the paper must be similarly dated.

A paper, when published, bears on it the date of reception of the MS. ; this may be used in claims of priority, and the rule just given about dating corrections and additions is intended to prevent the author claiming the date of the reception of the MS. for important statements introduced into the paper after that date.

6. An author can, if time permits, receive, on application to the Assistant Secretary, any reasonable number of copies of the proof of his paper, corrected so far as is possible, in order that if he so wishes he may send, before the meeting at which the paper is read, copies of

the proof to persons likely to take part in any discussion which may follow the reading of the paper. The Society leaves to the individual author the responsibility of thus making known the results of his labours before the account of those results is formally read; so far as the Society itself is concerned, a paper communicated to it is regarded as private until it has been read.

7. When a paper has been ordered for publication in the 'Proceedings' and read, it is desirable to avoid everything which would delay its publication. Hence an author should correct the first proof of his paper so carefully that he does not need to see a second proof or revise. It will frequently, however, be found desirable for the author to see such a revise after the paper has been read. It is most important that the corrections then made should be final, and should be made without delay. A demand for still another revise, or any delay in returning that revise, is nearly sure to prevent the paper appearing in the particular number of the 'Proceedings' which gives an account of the meeting at which the paper was read.

8. Editors of periodicals are often anxious to obtain copies of the papers read before the Society, in order that they may publish them, in whole or in part, in their own periodicals, without waiting for the appearance of the papers in the 'Proceedings' of the Society. The Society offers no objection to this practice, provided that the copy sent to the periodical is identical with the paper as it will appear in the 'Proceedings.' For this reason the Society keeps the distribution of such copies in its own hands, and does not entrust it to the authors. Otherwise, the Society would have no guarantee against the following accidents, which, indeed, previous to the present arrangements having been made, did actually occur. If it were left to the author, he might send to a periodical an early proof of a paper which, before it was ordered for publication, needed large amendment, so that the paper, as it appeared in the said periodical, might differ widely from the paper as it appeared in the 'Proceedings.' Again, since a paper ordered for reading is, for the convenience of Fellows attending the meeting at which the paper is read, usually set up in type without delay, and may be, indeed often is, so set up before it has been decided to publish the paper, it might happen (and, indeed, has happened) that an author sent to a periodical a copy of a paper as if it were about to appear in the 'Proceedings,' and yet that paper never so appeared. To avoid such undesirable occurrences, the following practice has been adopted. With the proofs of his paper the author receives a form to fill up, stating to what periodicals he wishes separate copies of his paper, *so soon as it is finally passed for press*, to be sent, and the Society distributes the copies according

to the list returned. The form sent to the author contains the titles of several periodicals to which separate copies will be sent on his returning the form with his signature attached. The author can modify the list as he wishes, striking out from or adding to it.

9. When a paper is printed off for the 'Proceedings' the author is entitled to receive gratis 100 separate copies; he can have 150 additional separate copies at cost price.

10. One object of the regulations just described is to enable the Secretaries to publish as quickly as possible the papers (including abstracts) ordered for publication in the 'Proceedings,' and, save in special cases, the deliberations necessary for ordering these to be published do not take a long time.

Any decision as to publishing a paper in the 'Philosophical Transactions' necessarily takes a longer time, since the responsibility of this rests with the Sectional Committee or Committees and the Council, no such freedom of action being given to the Secretaries and Chairmen of Committees as is given in the case of papers published in the 'Proceedings.' The author, however, may greatly help to shorten the interval between the reception of a paper and its publication in the 'Philosophical Transactions' by attending to the following matters:—

(1) The MS. should be, if possible, type-written, or at least written in a legible hand, and *properly prepared as copy for press*, so that the subsequent corrections in spelling, grammar, construction of sentences, references, &c., may be as few as possible.

(2) When the paper is accompanied by illustrations, these should be sent *in ready for reproduction*. Figures, for instance, for which a "process" can be used, should be supplied in a condition in which the process may be directly applied; figures intended to be lithographed should be properly arranged as Plates of the proper size, and so on.

(3) When the author is requested to make changes or additions to his paper before it is published, these should be made without delay; the tardy appearance of papers in the 'Philosophical Transactions' has often been due to delay of this kind on the part of the author.

PROCEDURE IN THE NOMINATION OF THE COUNCIL.*

1. The subject of the new Council shall be taken into consideration at a Meeting of Council to be held on the last Thursday of October; and with the summons for that Meeting there shall be transmitted a

* From Minutes of Council, June 20, 1872.

list of the Members of the existing Council, with the number of their attendances at Meetings up to that date ; also a List of the Fellows of the Society, with an indication of those who have at any time served on the Council, and the dates of their service.

2. At this Meeting the names of those Members of the existing Council who retire at the ensuing Anniversary shall be determined. Thereafter each Member present shall hand to one of the Secretaries a List of not exceeding ten Fellows whom he proposes for the new Council, of whom five shall not have already served on the Council. Members not able to be present may send in similar lists previous to the Meeting. The several lists of names so proposed shall then be read out by the Secretary.

3. Before the next following Meeting, the President and Officers shall prepare a list of twenty-one names for consideration by the Council, which list shall include ten names selected from those proposed at the previous Meeting, or other names, if required to make up that number. The list so prepared, together with a statement of the names proposed, and the number of votes given for each, shall be sent out confidentially with the summons for the ensuing Meeting, at which Meeting the names to be finally recommended shall be balloted for. In taking the ballot, a copy of the list, prepared by the Officers, shall, with such alterations as he may see fit to make therein, be delivered by each Member of the Council present and voting, and the names found to have the majority of votes shall form the list to be recommended to the Society.

4. The President and Council shall then nominate by ballot, out of the proposed Council, the persons whom they recommend to the Society for election to the offices of President, Treasurer, Principal Secretaries, and Foreign Secretary, for the ensuing year.

PROCEDURE OF THE COUNCIL IN THE NOMINATION OF FOREIGN MEMBERS.

(*Statutes, Cap. I, §§ XX—XXII.*)

XX. "A book shall be kept in which Members of the Council may enter the names of those men of science whom they suggest as Foreign Members ; each entry shall be signed by the proposer, and be accompanied by a short statement of the principal grounds on which the suggestion is made, and shall be valid for three years only.

XXI. "When vacancies are to be filled up, a list of the persons so entered shall be sent to each member of the Council, together

with notice of the Meeting at which the list will be considered. At the Meeting thus appointed further entries may be made, and the claims of those men of science whose names have been duly entered in the book shall be considered, and a selection of names shall be made, from among which the Council, at a subsequent Meeting to be then appointed, may make nominations to the Society.

XXII. "At the second Meeting the selection of the Candidates to be nominated shall be by ballot; when, if two-thirds of the Members of the Council present be in favour of the nomination of any Candidate, he shall be proposed at the next Ordinary Meeting of the Society, and shall be put to the vote at the following Ordinary Meeting."

PROCEDURE OF THE COUNCIL IN THE ADJUDICATION OF THE MEDALS.

1. At the first Meeting on the subject of the Medals, the Members of Council are invited to *suggest* a name, or names, which they may deem worthy of consideration in the adjudication of each of the several Medals. The list of suggested names then formed to be entered on the Minutes, with power to Members of Council to add to it afterwards, if they see fit.

2. At a subsequent Meeting (or Meetings), to be held before the Midsummer Recess (at which additions may be made to the List of suggestions), every Member of the Council present is at liberty to *propose* for each Medal the name of a person whom he recommends to be selected to receive it, specifying the particular work or works which form the ground of his recommendation; and these proposals, being seconded, shall be entered on the Minutes. At the same time the proposer is expected to deposit with one of the Secretaries a detailed statement of the claims of the person recommended by him, for consultation by Members of the Council, should they so desire.

3. The Council to be summoned on the last Thursday of October, for the purpose of discussing the merits, as regards the award of the Medals of the persons severally proposed. Additional proposals may be made at this Meeting, if assented to by two-thirds of the Members present.

4. The Council to meet for further consideration of the proposals on the first Thursday in November; the awards to be decided either on that day or at an early adjourned Meeting.

CONDITIONS OF AWARD OF THE ROYAL SOCIETY'S
MEDALS.

THE COPLEY MEDAL

is awarded to the living author of such philosophical research, either published or communicated to the Society, as may appear to the Council to be deserving of that honour. The subject or subjects of research, on account of which the medal is awarded, must be specified in making the award.

No limitation is imposed either as to the period of time within which that research was made, or to the particular country to which its author may belong.

The medal may not be awarded to any person who is a Member of the Council at the time when the award is made.

The medal may be given more than once to the same person if the Council deem it expedient.

The medal is, as far as circumstances admit, awarded annually.

THE RUMFORD MEDAL,

consisting of a gold medal with a silver copy struck in the same die, is awarded once every second year "to the author of the most important discovery or useful improvement which shall be made and published by printing or in any way made known to the public in any part of Europe during the preceding two years on Heat or on Light, the preference always being given to such discoveries as, in the opinion of the President and Council of the Royal Society, tend most to promote the good of mankind.

"If during any term of years from the last award no new discovery or improvement shall have been made in any part of Europe relative to Light or Heat, in the opinion of the President and Council of sufficient importance to deserve the award, it may not be given, but the value of it may be reserved, and being laid out in the purchase of additional stock may augment the capital; and the interest of the same, by which the capital may from time to time be so augmented, may be given in money" at a subsequent award with the medal.

THE ROYAL MEDALS,

consisting each of a gold medal with a silver copy struck in the same die, are awarded annually by the Sovereign upon the recommendation of the Council, for the two most important contributions to the advancement of Natural Knowledge, published originally in His Majesty's dominions within a period of not more than ten years, and of not less than one year of the date of the award.

In the award of the Royal Medals one is given in each year to each of the two great divisions of Natural Knowledge.

THE DAVY MEDAL

is awarded annually for the most important discovery in Chemistry made in Europe or Anglo-America.

THE DARWIN MEDAL,

which is accompanied by a grant of £100, is given biennially in reward of work of acknowledged distinction (especially in Biology) in the field in which Mr. Darwin himself laboured. The award may be made either to a British subject or a foreigner, and without distinction of sex.

THE BUCHANAN MEDAL,

which is accompanied by a grant of the balance of the Buchanan Medal Fund which may have accumulated since the last award, is awarded every five years in respect of distinguished services to Hygienic Science or Practice in the direction either of original research or of professional, administrative, or constructive work, without limit of nationality or sex.

THE SYLVESTER MEDAL,

which is accompanied by a grant of the balance of the income of the Sylvester Medal Fund, is awarded triennially for the encouragement of Mathematical Research, irrespective of nationality.

HUGHES MEDAL.

A Gold Medal, bearing a bust of the late Professor D. E. Hughes, is awarded annually, together with the balance of the income of the Fund, to such person as the President and Council may consider the most worthy recipient, without restriction of sex or nationality, as the reward of original discovery in the Physical Sciences, particularly electricity and magnetism or their applications, such discovery or applications having been published not less than one year before the award.

If in any year the Council do not see fit to award the medal, owing to no one being deemed sufficiently worthy of it, the income for that year is invested and added to the principal of the Fund.

THE MACKINNON RESEARCH STUDENTSHIPS.

Under the will of the late Sir William Mackinnon the Society has received a bequest to be applied to the foundation and endowment of prizes or scholarships for the purpose of "furthering Natural and Physical Science, including Geology and Astronomy, and of furthering original research and investigation in Pathology," and the following regulations have been drawn up for the administration of the Trust:—

1. Two Studentships, each of the present value of £150 per annum, shall be established under the name of "The Mackinnon Research Studentships."

2. The Awards shall be made by the Council of the Royal Society on the recommendation of a Committee to be appointed by the Council.

3. Each Studentship shall, in every case, be awarded for one year, but, on the recommendation of the Committee, after consideration of a report from the student upon his first year's work, may be awarded to him for a second year. Under exceptional circumstances a Studentship may be renewed for a third year.

4. The Studentships shall be awarded, so far as possible, for investigations in the two main divisions of Science respectively, these divisions corresponding to the two series (A and B) of the 'Philosophical Transactions,' but not including Mathematics.*

5. Applications for the Studentship shall be invited by public advertisement.

6. Candidates shall be required to state whether they hold other endowments, and the Committee shall have power to make inquiry into and take into account the other resources of the candidates.

7. Each candidate shall be required to state the nature of the research in which he proposes to engage. The research for which a Studentship is awarded shall be carried out only at a place approved by the Council, but the student shall not be allowed to carry on other work without the approval of the Council.

8. The Award shall be made always before the end of the Summer term.

9. In the event of a Studentship not being awarded, or from any cause lapsing before the expiry of the term for which it is granted, the unexpended income of the fund shall be invested so as to be available for extraordinary expenditure in furtherance of the general objects of the Bequest.

10. The Studentship shall be restricted to British subjects.

29 January, 1903.

* The following subjects are included in the two main divisions of Science respectively:—

A.		B.	
Astronomy.	Mineralogy.	Anatomy.	Pathology.
Chemistry.	Physics.	Botany.	Physiology.
Geology.		Palæontology.	Zoology.

REGULATIONS FOR ADMINISTERING THE GUNNING FUND.

A statement of the foundation will be found in the Account of the Society's Trusts, in the 'Record.' The regulations for its administration, proposed by the Council, March 14, 1895, and adopted by the Founder, May 16, 1895, are here subjoined.

REGULATIONS.

1. That the Fund should not be applied in the form of a prize, medal, or reward, but should be devoted to the furtherance of knowledge in some special direction.

2. That, by preference, the interest accruing from the Fund during every three years be applied for the promotion of Physical Science and of Biology alternately.

3. That aid should, by preference, thus be given in Physical Science and Biology respectively, either to investigations or operations which require to be repeated from time to time, or to the development of some specified continued line of research.

In illustration of Regulation 3, the Council suggested as follows:—
 "Among subjects that would thus seem fitting for the application of the Fund, the following might be given as instances:—The renewal from time to time of magnetic observations in the British Isles; the compilation and publication, at intervals, of detailed lists of well-authenticated spectra; systematic determination of biological data in special regions or under special conditions; assistance to naturalists or others carrying on explorations or special investigations in foreign countries; continued bacteriological observations, similar to those carried out under the direction of the Water Research Committee and others."

REGULATIONS FOR ADMINISTERING THE JOULE FUND.

(Council Minutes, March 14, 1893.)

1. That the proceeds be applied in the form of a Studentship or Grant, to be awarded every other year, to assist Research, especially among younger men, in those branches of Physical Science more immediately connected with Joule's work.

2. That this Grant be International in its character, and awarded alternately in Great Britain and abroad, or in such order as the President and Council shall from time to time decide.

3. That it be awarded in Great Britain by the President and Council of the Royal Society; and, for award in France, offered to the "Académie des Sciences," Paris; and in Germany, to the

“K. Akademie der Wissenschaften,” Berlin; or, in any other country, to the leading scientific institution, for award in that country.

4. That the award in Great Britain be made on the recommendation of a Committee, from time to time appointed by the President and Council of the Royal Society, but not of necessity confined to Fellows of the Society.

REGULATIONS FOR THE ADMINISTRATION OF
THE GOVERNMENT PUBLICATION GRANT.

(*Council Minutes, June 15, 1899. Amended November 7, 1901.*)

The following regulations for the administration of the Publication Grant from H.M. Treasury have been adopted by the Council:—

I. The allotment of the Grant shall be made by the President and Council.

II. In allotting the Grant, the President and Council shall “assist not merely their own publications, but also the adequate publication of scientific matter through other channels and in other ways.”

III. In making allotments for the purpose of assisting the adequate publication of scientific matter other than the Society’s own publications—

1. The President and Council shall consider—

(i.) Proposals made by Members of the Council.

(ii.) Applications made by other Scientific Societies through the usual official channels.

2. Proposals made by Members of the Council may be so made at any meeting of the Council, and applications by other scientific societies shall be reported by the Secretaries to the Council at the first Council Meeting after they have been received; but unless the Council, on grounds of urgency, shall otherwise order, no proposal or application shall be taken into consideration except at the meetings of the Council held in January and July, and no allotment shall be finally decided upon at the first of the said meetings if the decision can conveniently be postponed to the second of the said meetings.

3. Original memoirs shall be considered as having a first claim on the Grant, the aid being given towards the expense either of illustrations or of press-work; but the President and Council shall have power, if they see fit, to make an allotment in aid of other publications which tend to the advancement of natural knowledge, such as reports, abstracts, &c.

4. No decision of the President and Council at any one meeting of the Council, to allot a portion of the Grant, shall be valid unless

it receives the support of three-fourths of the members present and voting; but the decision of a simple majority at any one meeting shall be made valid if confirmed by a majority at a subsequent meeting.

IV. The balance of the Grant remaining over at the close of the financial year, after deducting the amounts allotted under Section III, shall be placed to the credit of the General Funds of the Society, to assist in the production of the Society's own publications, unless the President and Council shall otherwise order.

REGULATIONS FOR ADMINISTERING THE SCIENTIFIC RELIEF FUND.*

The history of the Scientific Relief Fund will be found in the account of the Society's Trusts contained in the "Record." The following are the Regulations at present in force:—

REGULATIONS.

1. There shall be a fund called The Scientific Relief Fund, and the object of it shall be to aid such scientific men, or their families, as may from time to time require assistance.
2. All contributions to the fund shall be invested in the name of the Royal Society in such funds as are authorised for investment by Trustees; and in such manner as to form a separate account from that of the Society's other funded property.
3. The fund shall be administered by a Committee, called The Scientific Relief Committee, which shall consist of ten Fellows of the Royal Society, and it shall be the duty of such Committee to select the recipients on whose behalf the income derived from the fund may be properly applied—always reporting thereon to the Council for confirmation.
4. The capital of the Fund shall remain entire, and the interest only shall be at the disposal of the Committee.
5. If the whole of the interest shall not be expended in one year, the surplus shall be carried to the next year's account; and, if at any time any surplus in excess of the ordinary income of the year last past shall thus accrue, the Council shall cause the whole, or part of it, to be added to the capital sum already

* Mainly codified from the Original Regulations adopted by the Council Nov. 3, 1859 (see also Minutes of May 26, 1859), and subsequent modifications passed by the Council on Dec. 22, 1859, Jan. 18, 1866, April 30, 1891, Jan. 19, 1893, April 30, 1896, Nov. 5, 1896.

invested; or, should they think fit, may cause any accumulated interest to be invested as unexpended income, the securities purchased being liable from time to time to be realised, and the proceeds expended as income.

6. No application for relief shall be entertained except on the recommendation of the President of one of the following Scientific Societies:—The Chemical, Entomological, Geological, Linnean, London Mathematical, Physical, Royal, Royal Astronomical, Royal Geographical, Royal Meteorological, Royal Irish Academy, Royal Society of Edinburgh, Society of Antiquaries, or Zoological Society; it being understood that the several Presidents will consult their respective Councils as to the persons whom they intend to recommend for relief.
7. The members of the Committee shall be appointed by the Council, and shall consist of ten members, each of whom shall serve for five years, so that two retire annually, and be not eligible for re-appointment on the occasion of their retiring. Should a vacancy occur by reason of death or otherwise, at any intermediate time, the Council shall appoint a person to fill the vacancy, and the person so appointed shall retire at the time the member whose place he fills would have retired had he continued until then to be a member, but if he have not served more than two years, shall be eligible for re-appointment.
8. The Council shall annually appoint a member of the Committee to act as Chairman for the ensuing year. The Chairman shall have power to nominate one of the Committee to act as his deputy.
9. The Chairman, or his deputy, shall have power to summon a meeting of the Committee at his discretion, and shall fix the time of such meeting.
10. Three of the Committee shall form a quorum.
11. The Treasurer of the Society shall have power, on the requisition of the Chairman of the Committee, or of his deputy, made in pursuance of a resolution of the Committee, but subject, nevertheless, to the provisions of Regulation 12, to make payments out of the Scientific Relief Fund not exceeding £100 in any one case, reporting such action to the Council at its next meeting.
12. The Chairman, or his deputy, shall, notwithstanding Regulation 6, have power to act in urgent cases during vacations of the Society, after consultation with one of the Secretaries of the Society, without calling the Committee together. In such cases the Chairman shall, after the vacation, summon a meeting of the Committee and report his action.

In the first Report of the Committee, dated November 30, 1864, it is stated that "It formed no part of the scheme to attempt the grant of annuities; it was rather intended to afford *prompt* relief of the immediate wants of those upon whom sudden affliction had fallen; although at the same time, it in no way debarred a continuation of such relief being given should the funds admit thereof." This intention of the founders, although it has not been embodied in a Regulation, has been continued, as a policy, to the present time.

Applicants are desired to fill in a form which can be obtained from the Assistant Secretary of the Royal Society, in which (confidential) information is requested upon the following points:—

1. Name, Age, and Social Condition.
2. Nature of Claims, stating scientific work done by the subject of the proposed grant, or by the member of his family on whose scientific claim he relies, appending a list of his principal contributions to science.
3. The nature of the emergency, and how it has arisen.
4. Whether the applicant is receiving, or has received, during the past six months, pecuniary aid from any other source.
5. Whether the applicant is entitled or able, in the circumstances which have arisen, to look to any other assistance; and, if so, what is the source and extent of such expected assistance.
6. Particulars of—
 - Number in family.
 - How many are self-supporting.
 - How many are partially dependent.
 - How many are wholly dependent.

In 1886 Sir William (afterwards Lord) Armstrong gave a sum of £7,800 to the Scientific Relief Fund, on the understanding that the said fund should be used for remission of fees in cases of urgent necessity. By a Resolution of Council passed December 10, 1889, "the question of the remission of fees to Fellows of the Society in impecunious circumstances is reserved for the sole consideration of the President and Council of the Society, the amount thus from time to time bestowed being communicated to the Scientific Relief Committee."

NATIONAL PHYSICAL LABORATORY.

SCHEME OF ORGANIZATION.

1. The name of the Institution shall be the National Physical Laboratory. The Kew Observatory shall be incorporated therewith.

2. The ultimate control of the Institution shall be vested in the President and Council of the Royal Society, who in the exercise thereof may from time to time issue such directions as they may think fit to the General Board and Executive Committee hereinafter described. The President of the Royal Society shall be the Chairman of the Governing Body as hereinafter defined. The income and all other property of the Institution shall be vested in the Royal Society for the purposes of the Institution.

3. For the present, and until otherwise ordered by the President and Council of the Royal Society, with the approval of H.M. Treasury, there shall be a Governing Body for the Institution, consisting of a General Board and an Executive Committee, the constitution and duties of which shall be as hereinafter defined. Provided always that the Permanent Secretary of H.M. Board of Trade shall be *ex officio* a member of the Governing Body, and that the choice of members of the Governing Body, or of any Committee thereof, shall not be confined to Fellows of the Royal Society.

4. The General Board shall consist of the President, Treasurer, and Secretaries of the Royal Society, the Vice-Chairman of the Board (appointed as defined below by the President and Council of the Royal Society), the Permanent Secretary of the Board of Trade, and of thirty-six ordinary members.

Twenty-four of the ordinary members shall be appointed by the President and Council of the Royal Society; of the remaining twelve ordinary members, two shall be nominated for appointment by the Council of each of the following Institutions, as being fitted to represent commercial interests in connection with the Laboratory:—

The Institution of Civil Engineers.

The Institution of Mechanical Engineers.

The Institution of Electrical Engineers.

The Iron and Steel Institute.

The Institution of Naval Architects.

The Society of Chemical Industry.

In the selection of ordinary members of the General Board care shall be taken that Scotland and Ireland are represented.

Any person not being already a member of the General Board who shall become a member of the Executive Committee, shall be a member of that Board during his tenure of office on the Executive Committee, but shall be regarded as an additional, and not as an ordinary, member of the Board.

5. The Executive Committee shall consist of the President, Treasurer, and one of the Secretaries of the Royal Society; the Vice-Chairman of the Executive Committee (appointed as defined below); the Permanent Secretary of the Board of Trade; six persons appointed by the President and Council of the Royal Society from among those who are members of the Kew Observatory Committee at the time when the Kew Observatory is incorporated in the National Physical Laboratory (two of these six persons shall retire at the end of every two years, and vacancies occurring amongst them by retirement or otherwise shall not be filled up); and of twelve ordinary members.

The ordinary members shall be nominated by the President and Council of the Royal Society, but one-half shall be chosen from among those members of the General Board who have been nominated as fitted to represent commercial interests on that Board.

Those members of the Executive Committee who are Fellows of the Royal Society, shall be appointed by the President and Council to be the Gassiot Committee of the Royal Society.

6. The Vice-Chairman of the General Board shall be appointed by the President and Council of the Royal Society, and shall also be Vice-Chairman of the Executive Committee. He shall hold office for six years, and shall be eligible for re-appointment, but shall not hold office for more than twelve years.

7. At least one-sixth of the ordinary members of the General Board and of the Executive Committee shall retire annually.

In the case of the General Board, the retiring ordinary members shall be selected by seniority, four being selected from the members nominated by the President and Council of the Royal Society, and two from the members nominated by the Technical Societies named in the scheme.

In the case of the Executive Committee, the retiring ordinary members shall be selected by seniority, one being selected from the members nominated by the President and Council of the Royal Society, and one from the members nominated by the Technical Societies named in the scheme.

No retiring member of the General Board or of the Executive Committee shall be eligible for re-appointment until at least one year has elapsed from the date of his retirement.*

The President and Council shall have power to remove from the General Board and from the Executive Committee any member of either whom they may judge to be disqualified.

Vacancies on the General Board or on the Executive Committee due to death, resignation, or removal by the President and Council of the Royal Society, shall be filled by the President and Council of the Royal Society, provided always that—

- (1) Any person so appointed shall, for the purposes of the regulations for retirement from the Board or Committee, be regarded at the time of his appointment as having served for the same period as the member to whose place he succeeds.
- (2) If the vacancy on the General Board be caused by one of the persons nominated as fitted to represent commercial interests ceasing to be a member of the Board, the President and Council of the Royal Society shall choose his successor from among a list of names recommended by the Councils of the Institutions named in Section 4.
- (3) If a vacancy on the Executive Committee be caused by one of the persons nominated as fitted to represent commercial interests ceasing to be a member of the Committee, his successor shall either be selected from among those members of the General Board who were nominated as fitted to represent commercial interests, or shall be nominated by the President and Council of the Royal Society after consultation with the Councils of the Institutions named in Section 4.

The President and Council of the Royal Society shall determine the order of the seniority of the members of the first General Board and of the first Executive Committee for the purposes of the regulations for retirement.

The Executive Committee.

8. The Executive Committee shall have the immediate management of the National Physical Laboratory; shall appoint and dismiss the officials, except the Director; and shall determine the nature of the work to be undertaken from time to time.

* The following addition to this paragraph, proposed by the Royal Society, has been sanctioned by H.M. Government:—

“ Unless, in the opinion of the President and Council of the Royal Society, there are special reasons in the case of any retiring member for his services being retained.”

The General Board.

9. A meeting of the General Board shall be held in March, at which the Executive Committee shall present a report on the work and finances of the National Physical Laboratory during the year ending on the preceding December 31. Copies of this report shall be circulated among the members of the General Board at least one week before the meeting, and after the meeting shall be forwarded to the President and Council of the Royal Society, together with any further report, resolutions, or recommendations which may be added by the General Board.

The Executive Committee shall also lay before the General Board at its meeting in March a statement as to the work which it is proposed to undertake in the Laboratory during the ensuing year. This statement shall be circulated among members of the Board at least a week before the meeting; and the General Board may make such recommendations relative to the statement, or to the future work of the National Physical Laboratory, as they may think fit.

These recommendations shall be laid before the Executive Committee for their consideration.

Sub-Committees.

10. The Executive Committee may from time to time appoint Sub-Committees, of which the members shall not necessarily be members of the Executive Committee or of the General Board, either to superintend or to assist in certain specified investigations, or to superintend some department of the National Physical Laboratory.

The Director.

11. The Director of the National Physical Laboratory shall be appointed by the President and Council of the Royal Society after consultation with the Executive Committee, on such terms as the President and Council may determine, and shall be removable by the President and Council. He shall be responsible to, and shall take instructions from, the Executive Committee, but, subject to such instructions, he shall have the sole direction and control of the officials of the National Physical Laboratory and of the work done within it.

The Executive Committee may delegate its power of appointing and dismissing the officials of the Institution to the Director in such cases as it may think fit.

The Director shall neither be allowed nor be called upon to undertake work not connected with the National Physical Laboratory, except with the consent of the Executive Committee.

Finance.

12. The Royal Society shall open a banking account, to be called "The National Physical Laboratory Account of the Royal Society," into which all sums received by the Executive Committee for the purposes of the Institution shall be paid. The Treasurer of the Royal Society shall also pay into this account all sums received by him for the said purposes, after deducting therefrom such amounts as he shall be directed by the President and Council, with the approval of the Treasury, to retain for the purpose of defraying any expenses which the Royal Society may incur in the exercise of its control of the Institution.

The Executive Committee shall be empowered to draw on this account for the purposes of the Institution by cheques signed by such members of the Executive Committee as may be authorised by the Committee to do so.

Legal Proceedings.

13. Any legal proceedings with regard to the affairs of the Institution, which it may become necessary to institute or defend, shall be instituted or defended by the Solicitors of the Royal Society, in the name and on behalf of the Royal Society upon the instructions of the Executive Committee, but no such proceedings shall be instituted or defended without the order of the President and Council of the Royal Society.

The Kew Observatory Committee of the Royal Society.

"The Kew Observatory Committee of the Royal Society," incorporated under the Companies Act, 1867, shall be wound up; and the property thereof shall be held by the Royal Society for the purposes of the Institution.

GENERAL BOARD OF THE NATIONAL PHYSICAL LABORATORY.

Retires
December

Ex-Officio
Members.

The President of the Royal Society.
1906 The Vice-Chairman of the Board (Lord Rayleigh, F.R.S.).
The Treasurer of the Royal Society.
The Secretaries of the Royal Society.
The Permanent Secretary of the Board of Trade.

Retires

December

- 1905 Prof. J. J. Thomson, F.R.S.
 1905 Prof J. Joly, F.R.S.
 1905 Adm. Sir W. J. L. Wharton, F.R.S.
 1905 Lord Kelvin, F.R.S.
 *Col. Crompton, R.E.
 1906 Dr. T. E. Thorpe, F.R.S.
 1906 Mr. C. E. Stromeyer
 1906 Prof. W. C. Unwin, F.R.S.
 1906 Prof. J. Perry, F.R.S.
 1907 Sir A. W. Rücker, F.R.S.
 1907 Mr. C. V. Boys, F.R.S.
 1907 Sir J. W. Swan, F.R.S.
 1907 Prof. H. L. Callendar, F.R.S.
 1908 Prof. W. G. Adams, F.R.S.
 1908 Prof. A. Gray, F.R.S.
 1908 Prof. W. M. Hicks, F.R.S.
 1908 Capt. H. B. Jackson, R.N., F.R.S.
 1909 Mr. G. T. Beilby.
 1909 Mr. H. T. Donaldson.
 1909 Prof. J. A. Fleming, F.R.S.
 1909 Sir A. Noble, F.R.S.
 1910 Sir W. de W. Abney, F.R.S.
 1910 Sir Benjamin Baker, F.R.S.
 1910 Mr. Leslie Robertson.
 1910 Mr. R. Threlfall, F.R.S.

Nominated by the
 President and
 Council of the
 Royal Society.

- 1905 Mr. A. Siemens (Inst. Elect. Eng.)
 1905 Mr. W. F. Reid (Soc. Chem. Industry)
 1906 Sir J. Wolfe Barry, F.R.S. (Inst.
 Civil Eng.)
 1906 Sir B. Samuelson, F.R.S. (Iron and
 Steel Inst.)
 1907 Dr. F. Elgar, F.R.S. (Inst. Naval Arch.)
 1907 Mr. W. H. Maw (Inst. Mech. Eng.)
 1908 Mr. R. Kaye Gray (Inst. Elect. Eng.)
 1908 Mr. R. Forbes Carpenter (Soc. Chem.
 Industry)
 1909 Sir E. H. Carbutt (Inst. Mech. Eng.)
 1909 Mr. A. F. Yarrow (Inst. Naval Arch.)
 1910 Mr. R. A. Hadfield (Iron and Steel Inst.)
 1910 Sir William White, F.R.S. (Inst. Civil
 Eng.)

Nominated by the
 Technical Soci-
 eties named in
 the Scheme.

*Additional Member, during his tenure on the Executive Committee.

EXECUTIVE COMMITTEE OF THE NATIONAL PHYSICAL LABORATORY.

Retires

December

- The President of the Royal Society.
- 1906 The Vice-Chairman of the Committee (Lord Rayleigh, F.R.S.).
The Treasurer of the Royal Society.
A Secretary of the Royal Society (Prof. J. Larmor).
The Permanent Secretary of the Board of Trade.
- 1905 Col. R. E. Crompton, R.E.
- 1906 Dr. T. E. Thorpe, F.R.S.
- 1907 Sir A. W. Rücker, F.R.S.
- 1908 Prof. H. L. Callendar, F.R.S.
- 1909 Sir Andrew Noble, F.R.S.
- 1910 Sir W. de W. Abney, F.R.S.

- 1906 Prof. J. Perry, F.R.S. (Member of the former Kew Observatory
Committee).

<ul style="list-style-type: none"> 1905 Mr. A. Siemens 1906 Sir John Wolfe Barry, F.R.S. 1907 Dr. F. Elgar, F.R.S. 1908 Mr. R. F. Carpenter 1909 Sir E. H. Carbutt 1910 Mr. R. A. Hadfield 	}	Members of the General Board nominated by the Technical Soci- eties named in the Scheme.
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Director.

R. T. Glazebrook, D.Sc., F.R.S.

Superintendent of Observatory Department.

C. Chree, Sc.D., F.R.S.

Superintendent of Engineering Department.

T. E. Stanton, D.Sc.

REGULATIONS FOR ADMINISTERING THE GOVERNMENT GRANT FOR SCIENTIFIC INVESTIGATIONS.

I.

1. The Government "Grant for Scientific Investigations undertaken with the sanction of a Committee appointed for the purpose" shall be administered by the President and Council of the Royal Society; but, subject as hereinafter provided, no payment shall be made thereout except with the sanction of a General Committee, consisting of the President and Council of the Royal Society for the time being, of the following *ex officio* Members:—

The President of the Royal Society of Edinburgh and one other Representative,

The President of the Royal Irish Academy and one other Representative,

The Presidents of—

The British Association,

The London Mathematical Society,

The Royal Astronomical Society,

The Physical Society,

The Institution of Civil Engineers,

The Institution of Mechanical Engineers,

The Institution of Electrical Engineers,

The Chemical Society,

The Iron and Steel Institute,

The Geological Society,

The Royal Geographical Society,

The Linnean Society,

The Zoological Society,

The Anthropological Institute,

The Royal College of Physicians,

The Royal College of Surgeons,

and of the Members, for the time being, of the several Boards hereinafter spoken of.

2. The President of the Royal Society, or, in his absence, one of the Vice-Presidents, shall preside at all Meetings of the General Committee.

3. Seven Boards shall be established, viz. :—

- A. For the consideration of Applications relating to Mathematics, Mathematical Physics, Crystallography and Mathematical Astronomy.
- B. For the consideration of Applications relating to Experimental Physics, Observational Astronomy, and Meteorology.
- C. For the consideration of Applications relating to Chemistry and Metallurgy.
- D. For the consideration of Applications relating to Geology, Palæontology, Mineralogy, and Geography.
- E. For the consideration of Applications relating to Botany.
- F. For the consideration of Applications relating to Zoology and Comparative Anatomy.
- G. For the consideration of Applications relating to Animal Physiology and Medical Subjects.

4. Each Board shall consist of eight Members, to be appointed by the President and Council of the Royal Society, Scotland and Ireland being as far as possible represented on each Board, and each Member shall serve for four years, so that two retire annually, and be not eligible for re-appointment on the occasion of their retiring. Should a vacancy occur by reason of death or otherwise, at any intermediate time, the Council shall appoint a person to fill the vacancy, and the person so appointed shall retire at the time the Member whose place he fills would have retired had he continued until then to be a Member, but if he have not served more than two years shall be eligible for re-appointment.

5. The President and Council of the Royal Society shall appoint a Member of each Board to be Chairman of the Board. All communications made to and by the Board shall be made through the Chairman, who shall be held responsible for the management of the business of the Board, and who shall have a second or casting vote. When a Chairman is unable to perform the duties of the Chair, he shall appoint a Member of the Board to act as his deputy, and to exercise his powers.

6. Each Chairman has authority to summon his Board, whenever he thinks fit (in addition to any Meeting or Meetings of the Board which may be appointed by the Council), to meet either at the Rooms of the Royal Society, during the hours specified in the Statutes (chap. xiv, § 7), or at such other place as he may deem desirable.

7. The summonses are to be issued by the Clerk at the direction of the Chairman.

8. Any three Members of a Board are to be a quorum of that Board ; but the decisions arrived at at a Meeting of a Board at which less than three Members are present shall be valid, if subsequently agreed to in writing by not less than five Members in all.

II.

9. In order to meet any extraordinary demands which may be made upon the Grant, a Reserve Fund may be accumulated, but so that it shall not at any time exceed £2,000.

10. A Grant, the payment of which is intended to be completed within a period of twenty-two months following upon the Meeting of the Committee at which the Grant was made, shall be called an "ordinary" Grant. The Committee shall, however, if they see fit, make Grants for "personal" or other expenditure, each of which may extend over a period not exceeding three years, but in no case shall such a personal Grant exceed £300 per annum. For this purpose the Committee may, in any one year, reserve from the Fund of the year an amount sufficient to cover the payment during the period for which the Grant has been made, the continuance of the payment of the instalments of such Grants to be conditional on the recipients furnishing, as hereinafter provided, evidence satisfactory to the Committee that the object of the Grant is being properly carried out. Such Grants shall be called "extended" Grants.

III.

11. Adequate notice shall be given in the public papers each year that applications for Grants must be sent in to the Royal Society not later than the last day of January, and no applications received after that date shall be considered by the Committee of that year.

12. Each applicant shall be required to furnish information under the following heads:—

- a. The nature of the research in which he desires to engage, and of the scientific results expected to follow therefrom.
- b. The amount asked for, and particulars of the proposed expenditure.
- c. Whether he has received any previous Grant from any source for the same object, and if so, with what results.
- d. Whether any portion of the Grant is to be devoted to his own personal expenses.

- e. What apparatus, if any, of permanent value he will require; so that any instruments, already at the disposal of the Committee, may be utilised.

13. Applications which have for their avowed object the mere promotion of commercial inventions or patents, and not any scientific research, and applications which appear to the Secretaries of the Royal Society to have reference to matters wholly unsuitable for Grants, shall not be included in the list referred to in Regulation 14.

14. As soon as possible after February 1st in each year, the Secretaries of the Royal Society shall cause to be drawn up a list of all the applications, arranged, according to the nature of the research in each application, in classes corresponding to the above-mentioned Boards, and shall cause such list to be distributed to all Members of the Committee. This list shall contain a brief statement of the information received under Clause 12.

15. The Secretaries of the Royal Society shall further cause to be sent to the Chairman of each Board the original applications belonging to the class corresponding to his Board, together with any other information, letters, documents, &c., which may have been furnished by the several applicants.

16. If the Chairman of a Board, on receiving a list of applications under Regulation 15, shall find that any application on that list is, in his opinion, more appropriate to another Board than his own, or that any application which ought, from its nature, to have been referred to a Board or to Boards besides his own, is referred only to his own Board, or that an application proper to his Board has been referred to another Board, he shall at once report the same to the Secretaries of the Royal Society.

17. Should any application appear to the Secretaries of the Royal Society to relate to more than one Board, they shall refer the application to the several Boards to which it appears to relate.

18. Each Board, having taken into consideration the applications submitted to it, making such use of correspondence between Members of the Board as may be desirable for the purpose, shall report, stating, with reference to each such application, whether they recommend the acceptance of it in part or in whole, or the rejection of it; and the Clerk shall cause the Reports of the several Boards to be distributed as soon as possible to all Members of the Committee.

19. It shall be in the power of any Board to initiate an inquiry and to recommend a Grant for the purpose, and such a recommendation having been reported to the Committee with the other recommenda-

tions of the Board, shall take its place among applications recommended to the Committee for acceptance, in spite of application not having been made in the ordinary way.

20. In the ordinary course in each year a Meeting of each Board shall be held at the Society's Rooms soon after the receipt by the Chairman of the applications, and a subsequent Meeting shall be held to come to final decisions on the applications on a day to be fixed by the Council for a simultaneous Meeting of the Boards; but the Chairman may, if he finds it desirable, change the day of the latter Meeting, and he may even omit the one or the other of these Meetings, should he judge the one or the other to be unnecessary.

IV.

21. The General Committee shall meet on the third Wednesday (or, if that fall in Whitsun Week, the fourth Wednesday) in May, at which Meeting the Reports of the Boards shall be read, considered (the Chairman of each Board, or in his place some other Member of it, giving such explanations with regard to the decisions of the Board as may seem desirable), and voted upon. The voting shall be by show of hands, unless any Member demands a ballot, in which case it shall be by ballot.

22. In the case of applications which have been recommended by the appropriate Board, or recommendations initiated by any Board, the voting in Committee shall be by simple majority of those present, except in the case of "extended" Grants coming under Clause 10, which Grants shall require the assent of two-thirds of those present.

23. Applications which have been rejected by the appropriate Board shall not be reconsidered in Committee except with the consent of two-thirds of those present, and any applications so reconsidered shall not be granted by the Committee otherwise than by a majority of two-thirds; likewise a proposal to increase the amount of any Grant made by a Board shall not be considered in Committee except with the consent of two-thirds of those present, and the increase so considered shall not be granted by the Committee otherwise than by a majority of two-thirds.

24. The Committee shall have power to place each year at the disposal of the President and Council of the Royal Society, a sum not exceeding £500 to meet any pressing demands upon the Fund which may be made between the annual Meetings of the Committee.

25. The President of the Royal Society shall further have power, in case he is of opinion that there is urgency for an immediate Grant of a sum too large to be provided by the Fund referred to in Clause 24, and necessitating a call upon the Reserve Fund, to summon a Special Meeting of the Committee, who, if they see fit, shall decide on such Grant, provided always that due notice of such Meeting, with a statement of the purpose for which it is called, be sent to each Member of the Committee fifteen days before the date fixed for the Meeting.

V.

26. No Grants shall be made to other than British subjects.

27. All Grants shall be subject to the following conditions, and every applicant shall, on his applying, be duly informed of these conditions:—

- i. That all instruments, specimens, objects, or materials of permanent value, whether purchased or obtained out of, or by means of, the Grant, or supplied from among those at the disposal of the Committee, are to be regarded, unless the Committee decide otherwise, as the property of the Government, and are to be returned by the applicant, for disposal according to the orders of the Committee, at the conclusion of his Research, or at such other time as the Committee may determine.
- ii. That every one receiving a Grant shall furnish to the Committee, on or before the 31st of December following upon the allotment of the Grant, a Report (or, if the object of the Grant be not then attained, an interim Report, to be renewed at the same date in each subsequent year until a final Report can be furnished, or the Committee dispense with further Reports), containing (a) a brief statement showing the results arrived at, or the stage which the inquiry has reached; (b) a general statement of the expenditure incurred, accompanied, so far as is possible, with vouchers; (c) a list of the instruments, specimens, objects or materials, purchased or obtained out of the Grant, or supplied by the Committee, which are at present in his possession; and (d) references to any Transactions, Journals, or other publications in which results of the Research have been printed.

In the event of the grantee failing to send in, within three months of the said 31st December, a report satisfactory to the Board which recommended the Grant, he shall return the whole of the sum allotted to him.

- iii. That when a Grant is asked for a definite Research, for which an estimate can be obtained, applicants are required, with their applications, to furnish such an estimate.
- iv. That no portion of a Grant may be expended in the payment of an assistant unless specific application for the sanction of such expenditure is included in the statement required to be furnished under Regulation 12b.
- v. That when an application is for a Grant to two or more persons to act as a Committee for the purpose of carrying out some scientific object, the application shall state which Member of the proposed Committee is willing to act as Secretary, to be responsible for furnishing the Report, for receiving and disbursing the money, and in general for the conduct of the business of the Committee.
- vi. That Grants shall lapse at the end of twenty-two months from the date of allotment, if application for payment be not made within that time.
- vii. That papers in which results are published which have been obtained through and furnished by the Government Grant, should contain an acknowledgment of that fact.

The Committee shall further have power to attach to any Grant any other conditions which they may think desirable.

28. Every applicant to whom a Grant is made shall, before any of the Grant is paid to him, be required to sign an engagement that he is prepared to carry out the general conditions applicable to all Grants, as well as any conditions which may be attached to his particular Grant.

29. The Chairman of each Board is expected to see that the Annual Reports provided for by Regulation 27 (ii), furnished by Grantees, give an adequate account of the work done and the results attained, and in cases where the Reports are inadequate, to inform the Clerk of the fact in order that he may communicate with such Grantees.

30. Printed copies of these Reports shall each year, so soon as possible after January 31, be submitted to the several Boards; and it shall be the duty of each Board to examine the Reports relating to Grants recommended by it, and to report to the Committee (or, in case of urgency, to the Council of the Royal Society) any deficiencies therein, or any action relating thereto which the Board thinks desirable.

31. The Clerk to the Committee shall report to the several Boards all cases in which Grantees refuse or neglect to furnish Reports, and it shall be the duty of each Board to whom any such case is reported to take such action thereon as it may think necessary, including a recommendation to the Council that legal proceedings should be taken against the defaulting Grantee.

32. In the case of a Grant recommended by a Board being for the purpose of enabling the applicant to collect by means of the Grant, or part of it, specimens, objects, or materials of permanent value, the Board shall, whenever it is able to do so, add to its recommendation conditions as to the final disposal of such specimens, objects, or materials.

33. The recipient of an "extended" Grant shall make to the Board which recommended the Grant, half-yearly, or, if the Board desire it, oftener, such Reports as the Board may determine concerning the way in which the object of the Grant is being carried out; and each such recipient shall, on receiving notice that the Grant has been made to him, be informed of his duty to make such Reports, and shall express in writing his willingness to do so. Should any Board be of opinion, after receiving such Reports, that the object of the Grant is not being properly carried out, they shall report the same to the next Meeting of the Committee. The Chairman of the Board shall move at the Meeting of the Committee that the Grant be discontinued, and if the Committee by a majority approve of the Grant being discontinued, it shall be discontinued.

VI.

34. The President and Council of the Royal Society may in each year set aside out of the Reserve Fund such sum as they may consider desirable to provide for any expenditure which may be incurred by the Royal Society (including expenditure on printing, clerks' salaries, and office expenses) in undertaking, controlling, supervising or advising upon matters which the President and Council may at the request of the Government undertake, control, supervise, or advise upon.

VII.

35. There shall be a Clerk to the Government Grant Committee, who shall be appointed by the President and Council of the Royal Society, and shall be paid such salary as they shall determine. He shall be under the orders and directions of the President and Council of the Royal Society.

36. A sum of £200 shall be yearly placed at the disposal of the President and Council to provide for the salary of the Clerk, and other incidental purposes.

37. All Grants and other payments made out of the Government Grant shall be paid by cheque, signed by the Treasurer of the Royal Society and countersigned by the Clerk to the Committee.

38. A Professional Accountant shall be employed to audit the accounts in chief. A preliminary examination of the detailed accounts and vouchers shall be made by the Clerk to the Committee, who is instructed to submit to the Chairman of the appropriate Boards the cases which appear to him to be doubtful; and the Chairman of a Board shall examine any such case so submitted to him, and take such action as may seem to him desirable.

VIII.

39. A Schedule shall be kept of all instruments, specimens, etc., of permanent value, in furtherance of Regulation 27 (i), and of Clause e of Regulation 12.

40. The Chairman of a Board may authorise the transfer of any instrument, specimen, &c., obtained by means of a Government Grant, and no longer needed by the person by whom it was obtained or to whom it was assigned, to any other person applying to the Government Grant Committee for the loan of the instrument, specimen, &c., if in his judgment such a transfer is desirable. He shall in each case report his having done so to the Secretaries of the Royal Society.

41. All instruments returned by a Grantee which are not suitable for preservation under Regulation 39, may be purchased by such Grantee for such price as may be approved of by the Treasurer of the Royal Society, and if not so purchased, shall be offered for presentation to the National Physical Laboratory, and if the Laboratory has no need for them, they shall be sold to such person and for such price as may be approved by the Treasurer of the Royal Society. The proceeds of any such sale shall be carried into the Reserve Fund.

Account of the Appropriation of the Sum of £4,000 (the Government Grant) annually voted by Parliament for Scientific Investigations.

April 1, 1903, to March 31, 1904.

	£	s.	d.
Prof. H. H. Turner, for the measurement and reduction of photographs of the planet Eros and neighbouring stars	50	0	0
T. Wright, for the determination of harmonic tidal constants for New Zealand ports.....	25	0	0
Dr. A. M. W. Downing, to compute certain places of the moon from Hansen's tables	25	0	0
Prof. R. A. Sampson, for the construction of new tables of Jupiter's satellites	50	0	0
Sir Robert Ball, for continuation of reduction of photographs of Eros for the determination of the solar parallax	60	0	0
Prof. E. W. Brown, to complete the calculation of the rectangular coordinates of the Moon, so far as the actions of the earth and sun are concerned.....	50	0	0
Government Astronomer, Perth, Western Australia, to carry on the work of the Astrographic Catalogue.....	100	0	0
A. E. Tutton, to defray the balance of cost of an elasticity apparatus	75	0	0
Dr. C. Chree, to work up declination (magnetic) results obtained at Kew from 1857 to 1900	82	10	0
Prof. R. A. Lehfeldt, to determine the Joule-Thomson effect, especially at low temperatures	27	0	0
G. W. Walker, for a research on the variation with temperature of the dielectric constant of gases	22	10	0
Dr. R. S. Willows, for a research upon the electrical resistance of alloys.....	15	0	0
W. F. Denning, for the observation of shooting stars and search for new comets (<i>personal</i>)	22	10	0
Carried forward.....	£604	10	0

Brought forward.....£	604	10	0
Prof. E. Wilson, for a research on the physical properties of 24 light aluminium alloys	54	0	0
W. L. Fox, for the continuation of magnetic observations at Falmouth	54	0	0
Dr. H. A. Wilson, to detect and measure the electric effect of moving a dielectric in a magnetic field	36	0	0
Dr. P. E. Shaw, to investigate (a) the change in length, when subject to a strong circular magnetic field, of the less magnetic materials; (b) the potential differences associated with very small sparking distances for various materials	18	0	0
J. E. Petavel, for the construction and testing of a new standard of light	49	10	0
J. B. Burke, to continue investigations on phosphorescence and radioactivity	22	10	0
J. Russell, for a research on (a) superposed magnetic inductions in nickel, (b) aeolotropy of demagnetised iron	18	0	0
Dr. M. W. Travers, to meet current expenses of researches on liquid hydrogen	45	0	0
D. L. Chapman, for a research on the chemical changes accompanying the passage of electricity through gases ...	22	10	0
Prof. J. Joly, to investigate the possibility of a variation of mass attending certain chemical and physical changes	22	10	0
T. G. Bedford, for experiments on the depression of the freezing point in aqueous solutions of typical salts ...	36	0	0
Prof. J. J. Sudborough, for continuation of work on esterification constants of organic acids	50	0	0
Prof. F. R. Japp, for a further investigation of the reactions of ketones, diketones, and allied compounds ...	50	0	0
Prof. W. H. Perkin, jun., for (a) experiments on synthesis of camphoric acid; (b) investigation of cryptopin, gnoscopin, xanthallin, &c.	75	0	0
Dr. J. F. Thorpe, for a research on the conditions of transformation of the glutaric acids into the trimethylene ring or the corresponding glutaconic acids	30	0	0
Carried forward.....£	1,187	10	0

Brought forward.....	£1,187	10	0
Prof. F. S. Kipping, for continuation of research on optically active and compensated compounds	30	0	0
Prof. J. Walker, for an investigation of products of electrolysis of salts and ester-salts of polymethylene-carboxylic acids	70	0	0
Dr. J. W. Mellor, for continuation of research on the union of hydrogen and chlorine	80	0	0
Dr. F. D. Chattaway, for continuation of the study of the transformation of nitrogen halogen derivatives, &c... ..	30	0	0
Dr. W. A. Bone, for continuation of researches on hydrocarbons	33	0	0
H. O. Jones, for an investigation of optically active compounds	30	0	0
Prof. H. E. Armstrong, for the study of isomeric derivations of naphthalene	100	0	0
R. S. Hutton, for research on the chemical and physical phenomena occurring in the electric furnace ...	55	0	0
Dr. E. P. Perman and G. A. S. Atkinson, for a research on the decomposition of ammonia with rise of temperature	40	0	0
Prof. E. J. Garwood, for construction of a sounding apparatus for investigation of the origin of mountain and other lakes	20	0	0
W. G. Woolnough, for the investigation of metamorphic and plutonic rocks of the Fiji Islands	70	0	0
A. M. Bell, for an investigation into the early history of man in the Thames Valley and elsewhere in England	25	0	0
Prof. W. J. Sollas, to continue an investigation into the nature of certain fossils by means of serial sections...	100	0	0
Dr. Forsyth Major, for the purpose of making researches amongst the recent fossil Rodentia; for assistance in preparing a monograph of the anatomy of the Okapi; and for the continuation of his work upon the sub-fossil mammals of Madagascar	50	0	0
W. West, for continuation of researches on the fresh-water algae of Great Britain	22	10	0
Carried forward	£1,943	0	0

Brought forward.....	£1,943	0	0
C. E. Moss, to investigate the geographical distribution of vegetation in North Somerset	13	10	0
Dr. F. E. Fritsch, to investigate the biology of tropical freshwater algae.....	135	0	0
Dr. J. H. Wilson, for investigations into the structure of hybrid plants, more especially <i>Albucas</i>	9	0	0
M. Hardy, for a botanical survey of Scotland	13	10	0
Miss H. Chick, to further study the phenomenon of "nitrification" with special reference to the micro-organisms concerned.....	27	0	0
Prof. F. W. Oliver, to endeavour to trace the unassigned coal-measure seed <i>Lagenostoma</i> to the plant which bore it	22	10	0
W. Bateson, for continuation of statistical experiments in the physiology of heredity	76	10	0
Dr. H. M. Vernon, for a research on intracellular ferment in plants and animals	18	0	0
Dr. G. H. F. Nuttall, for continuation of researches on a biological test for blood. Continuation of "studies in relation to malaria"	30	0	0
Major W. C. Daniels and C. G. Seligmann, for the study of animal and plant cults of the Western Papuans, &c.	50	0	0
E. S. Hartland, for ethnological investigations of Coast Salish and other tribes of British Columbia	40	0	0
F. J. Cole, to collect embryonic and early stages of <i>Myxine</i> , and to complete a general monograph on the anatomy of <i>Myxine</i>	50	0	0
Miss R. M. Clark, for a research on the early development of <i>Flustrella hispida</i> , and the formation of the yolk in the eggs of this and other Polyzoa (<i>personal</i>)	15	0	0
Prof. E. B. Poulton, to continue investigations into the struggle for existence in insects, and to attempt to prove, experimentally, the value of cryptic colouring, &c.	42	0	0
A. Meek, for continuation of researches on growth ...	25	0	0
Carried forward.....	£2,510	0	0

Brought forward.....	£2,510	0	0
S. Vincent, for an investigation into the functions of the thymus and other ductless glands.....	30	0	0
Prof. W. D. Halliburton, (a) for continuation of research on nerve regeneration; (b) to study influence of bile salts and potassium salts on blood pressure; (c) continuation of research on proteids	50	0	0
Prof. R. Stockman, for a research on the action of arsenic, lead, mercury, phosphorus, iron and quinine on the bone marrow	10	0	0
J. Barcroft, for a research on the metabolism of the submaxillary gland, pancreas, and muscle	25	0	0
Dr. E. W. A. Walker, for further work upon the problem of immunity and reaction of living tissues to bacteria, &c.	20	0	0
Dr. Henry Head, for an investigation into the structure of, and processes of degeneration and regeneration in, the peripheral nerves	20	0	0
Prof. E. H. Starling, for a research on (a) the influence of nerves on the activity of the pancreas; (b) the adjustment of pancreatic activity to nature of food, &c.....	50	0	0
Dr. S. B. Schryver, for the investigation of (a) the chemistry of bile; (b) physiological action of ecbolics ...	15	0	0
Prof. J. B. Haycraft, for a research on the elasticity of animal tissues	10	0	0
J. H. Parsons, for continuation of research on (a) neurology of vision; (b) relations of intraocular circulation to intracranial pressure.....	20	0	0
T. R. Elliott, for a research on the innervation of the bladder and rectum in mammalia.....	20	0	0
J. J. R. Macleod, for an investigation of the chemical nature of the substances to which tubercle bacillus owes its acid-fast properties	10	0	0
Treasurer, Royal Society, for further research in Uganda into the disease known as Sleeping Sickness	412	0	0
Leonard Hill, for continuation of researches on the effects of high atmospheric pressure on oxygen poisoning, &c.	30	0	0
Carried forward.....	£3,232	0	0

Brought forward.....	£3,232	0	0
Dr. J. Eyre, for continuation of research on the life history of the pneumococcus.....	10	0	0
Dr. M. S. Pembrey, for continuation of researches upon (a) metabolism of hibernating animals; (b) causes of apnoea; (c) so-called "heat centres"; (d) gases of blood in diabetic coma	40	0	0
Prof. F. W. Tunnicliffe, for continuation of researches on the pharmacology of five-ring compounds	10	0	0
Dr. W. A. Osborne, for a research on the excretion of carbo-hydrates by the normal and pathological kidney ...	25	0	0
Dr. W. E. Dixon, for further considerations on drug leucocytosis	10	0	0
Otto May, for a research on the mechanism of secretion of pancreatic juice.....	5	0	0
Dr. F. S. Locke, to investigate the effect on the isolated mammalian heart of various chemical and physical influences.....	20	0	0
Dr. T. G. Brodie, for researches upon (a) circulation through the lungs; (b) effects of anæsthetics; (c) secretion of urine; (d) innervation of cerebral vessels	20	0	0
Dr. H. K. Anderson, for investigation of the myelination of the peripheral nervous system	20	0	0
Dr. W. Hall, for further inquiries into purin bodies of food stuffs	10	0	0
H. H. Dale, for an investigation of the histological changes occurring in the pancreas under the action of a stimulant.....	10	0	0
Prof. C. S. Sherrington, for a research on nervous conduction within the spinal cord and in the efferent nerves.....	30	0	0
Dr. F. G. Hopkins, for (a) an investigation into the nature of certain atomic groupings present in proteid muscle; (b) the study of the genesis of physiological pigments from proteids	30	0	0
Carried forward.....	£3,472	0	0

Appropriation of the Government Grant. 115

	Brought forward.....	£3,472	0	0
Prof. Cash, for a research on the action of certain aconite alkaloids.....		10	0	0
W. H. L. Duckworth, for investigations into the physical anthropology of inhabitants of Greece and Crete, and for observations on human skeletons at Palaeokastro		50	0	0
Meteorological Society, to continue observations by means of kites on the meteorology of the upper atmosphere.....		200	0	0
Dr. L. Rogers, for researches on physiological action of poison of Indian venomous snakes		20	0	0
		£3,752 0 0		

REVENUE ACCOUNT.

1903-1904.

GENERAL FUND.

<i>Cr.</i>	£	s.	d.		£	s.	d.	<i>Dr.</i>
To Appropriations as above	3,752	0	0		By Parliamentary Grant	4,000	0	0
„ Salary, Printing, Postage, Advertising, &c..	200	0	0					
„ Transfer to Reserve Fund	48	0	0					
	£4,000 0 0					£4,000 0 0		

RESERVE FUND.

<i>Cr.</i>	£	s.	d.		£	s.	d.	<i>Dr.</i>
To Balance, March 31, 1904	896	13	2		By Balance, April 1, 1903	640	12	9
					„ Transfer from General Fund	48	0	0
					„ Repayments	168	4	3
					„ Grants unclaimed ..	20	0	0
					„ Interest on Deposit ..	24	16	2
	£896 13 2					£896 13 2		

REGULATIONS GOVERNING THE USE OF THE LIBRARY
OF THE ROYAL SOCIETY.

1.* The Library shall be open to the Fellows every week-day (exclusive of Good Friday and Easter-eve, of Easter week, of a week at Whitsuntide, and of a week at Christmas), from 11 A.M. to 6 P.M., except on Saturdays, when it shall be open from 11 in the morning to 1 in the afternoon; but during the months of August and September, it shall be closed on week-days other than Saturdays at 4 P.M.

2. Any Fellow may have the loan of any of the printed Books of the Society, excepting such as the Council shall order not to be taken out of the Library; but he shall not be allowed to have in his possession more than ten volumes at a time. The loan of Manuscripts is exclusively vested in the President and Council.

3. A List of all Books and Manuscripts borrowed from the Library of the Royal Society, and of the Fellows of the Society to whom they are lent, shall be kept in the Library.

4. All books whatsoever belonging to the Society, shall be returned at a time to be specified by the Council in each year; and the Library shall be closed for one month after such time, or for such shorter periods as the Council may direct.

5. The value of such Books in the possession of any Fellow as are not returned to the Library, pursuant to the preceding Statute, shall be required to be paid by the person who has so detained them.

6. No persons other than Fellows have the privilege of using the Library, except upon a written introduction from a Fellow, with whom rests the responsibility for all books entrusted to the person introduced. Every such introduction shall be valid only until the 1st August next ensuing.

7. Dictionaries, Cyclopædias, and works of general reference do not circulate.

8. Books of exceptional rarity, size, or value, are only allowed to circulate by special permission of the Council.

9. All books are borrowed subject to recall after one month's interval.

10. All books are returnable to the Library *on the 1st August in each year*, and no books can be borrowed during the month of August.

11. All applications for the use of the Library are to be addressed to the *Assistant Secretary and Librarian*, who is charged with the carrying out of these regulations.

Ordered by the Library Committee at their
meeting on the 16th December, 1898.

* Regulations 1—5 are from the Statutes, ch. xiv.

ADDITIONS TO LIBRARY, 1903-1904.

- Algué (José) The Cyclones of the Far East. Special Report of the Director of the Philippine Weather Bureau. 4to. *Manila* 1904.
From the Bureau.
- Atlas de Photographie Solaire, de l'Observatoire Physique de Paris. Publié par J. Janssen. Fasc. 1. Large atlas folio. 1903.
From the Observatory.
- British Office Life Tables, 1893. Account of Principles and Methods. 8vo. *London* 1903.
From the Joint Committee, Inst. of Acts. and Fac. of Acts. in Scotland.
- Brough (Bennett) Cantor Lectures on Mining of Non-metallic Minerals, 1904. 8vo. *London*. From the Author.
- Cambridge Anthropological Expedition to Torres Straits. Reports. Vol. V. 4to. *Cambridge* 1904.
From the Syndics of the Cambridge Press.
- Census of India, 1901. Report and Tables. 2 vols. Folio. *Calcutta* 1903.
From the Government of India.
- Cesi (F.) Opus probatissimum de Plantis. R. Lync. Acad. annum CCC concelebr. 4to. *Roma* 1904. From the R. Accad. d. Lincei.
- Chapman (E. J.) Mineral Systems: a Review, with Outline of an Attempted Classification of Minerals. 8vo. *London* 1904.
From Mrs. Chapman.
- Cullingworth (C. J.) Charles White, F.R.S., a Great Provincial Surgeon and Obstetrician of the 18th Century. 8vo. *London* 1904.
From the Author.
- Cunningham (Lieut.-Col. Allan) Quadratic Partitions. 8vo. *London* 1904
From the Author.
- Dictionary of National Biography. Index and Epitome. 8vo. *London* 1903.
Purchased.
- Garstin (Sir Wm.) Report upon the Basin of the Upper Nile, with Proposals for the Improvement of that River. Folio. *Cairo* 1904.
From the Public Works Department, Cairo.
- Gilbert Tercentenary Celebration, 1903. "Gilbert of Colchester, Father of Electrical Science." "Gilbert, Physician." 2 tracts, by Prof. S. P. Thompson, F.R.S. From the Author.

- Gomes Teixeira (F.) *Obras sobre Mathematica*. Vol. I. Small folio. *Coimbra* 1904. From the Author.
- Graff (L. v.) *Die Turbellarien als Parasiten und Wirte*. 4to. *Graz* 1903. Purchased.
- Hale (G. E.) (and others). *Spectra of Stars of Secchi's Fourth Type*. From "Decennial Publications of University of Chicago." 4to. *Chicago* 1903. From the University.
- Hauswaldt (H.) *Interferenz-Erscheinungen an doppelt brechenden Krystallplatten im Convergenten Polarisirten Licht, photographisch aufgenommen*. 2 portfolios. 4to. *Magdeburg* 1902, 1904. From the Author, per Prof. S. P. Thompson, F.R.S.
- Hooker (Sir J. D.), F.R.S. *Sketch of Flora of British India*. (Under revision.) 8vo. *London* 1904. From the Author.
- Hutton (Capt. F. W.), F.R.S. *Index Faunæ Novæ Zealandiæ*. Published for the Philos. Institute of Canterbury, N.Z. 8vo. *London* 1904. From Capt. Hutton (Editor).
- Jaegermann (R.) Prof. Dr. Th. Bredichin's *Mechanische Untersuchungen über Cometenformen in Systematischer Darstellung*. Small folio. *St. Petersburg* 1903. From the Author.
- Kelvin (Lord), F.R.S. *Baltimore Lectures on Molecular Dynamics and the Wave Theory of Light*. 8vo. *London* 1904. From the Author.
- Latham (B.) *Croydon Bourne Flows*. 8vo. *London* 1904. From the Author.
- Laplace. *Œuvres Complètes*. Vol. XIII. 4to. *Paris* 1904. From the Académie des Sciences.
- Meldola (R.), F.R.S. *The Chemical Synthesis of Vital Products and the Inter-relations between Organic Compounds*. Vol. I. 8vo. *London* 1904. From the Author.
- Moissan (H.) *Chimie Minérale*. Tome 1, Fasc. 2; Tome 3, Fasc. 2. 8vo. *Paris* 1904. From the Author.
- Monfallet (D.) *Études d'Anatomie Pathologique et de Bactériologie Comparée*. 8vo. *Santiago de Chile* 1901—*Bibliographie Abrégée des Infections*. 8vo. *Paris* 1903. From the Author.
- Murie (James) *Report on the Sea Fisheries and Fishing Industries of the Thames Estuary*. 8vo. *London* 1903. From the Author.
- Norwegian N. Polar Expedition, 1893-1896. *Scientific Results*. Vol. IV. 4to. *Christiania*. From the Council of the Fridtjof Nansen Fund.
- Nuttall (G. H. F.) *Blood Immunity and Blood Relationship*. 8vo. *Cambridge* 1904. From the Author.
- Paventy (H.) *Les Tourbillons de Descartes et la Science Moderne*. 8vo. *Paris* 1903. From the Author.

- Retzius (Anders) *Skrifter i skilda Ämnen jämte Några Bref.* 8vo. *Stockholm* 1902. From the Stockholm Academy.
- Rutherford (E.), F.R.S. *Radio-activity.* 8vo. *Cambridge* 1904. Purchased.
- Schlich (W.), F.R.S. *Manual of Forestry.* Vol. II. *Sylviculture.* 3rd Edition, revised. 8vo. *London* 1904; *Forestry in the United Kingdom.* 8vo. *London* 1904. From the Author.
- Schubert (J.) *Wärmeaustausch im festen Erdboden, in Gewässern u. in der Atmosphäre.* 8vo. *Berlin* 1904. From the Author.
- Scudder (S. H.) *Nomenclator Zoologicus.* 8vo. *Washington* 1902. Purchased.
- Stokes (Sir G. G.), Bart., F.R.S. *Mathematical and Physical Papers.* Vol. III. 8vo. *Cambridge* 1901. From Syndics, Cambridge University Press.
- Swedish Expedition to Egypt and the White Nile, 1901, under direction of L. A. Jägerskiöld. *Results.* Part I. 8vo. *Uppsala* 1904. From the University of Uppsala.
- Torroja y Caballé (Ed.) *Teoría Geométrica de las Líneas Alabeadas de las Superficies Desarrollables.* 8vo. *Madrid* 1904. From the Author.
- West (W. and G. S.) *A Monograph of the British Desmidiaceæ.* Vol. I. 1904. (Ray Society volume.)
- Willcocks (Sir Wm.) *The Assuân Reservoir and Lake Mœris, a Lecture.* 8vo. *London* 1904. From the Author.
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ACCESSIONS TO SERIALS.

-
- American Museum of Natural History. Memoirs. Vol. I.—Large 4to.
New York 1893. Presented.
- Archivio di Fisiologia, dal Prof. Dr. Giulio Fano. Vol. I.—8vo.
Firenze. Subscription.
- Bulletin of the Bureau of Standards. Vol. I.—8vo. *Washington*.
Presented.
- Contributions from the Jefferson Physical Laboratory, Harvard
University, for year 1903. Vol. I.—8vo. *Cambridge, Mass.*
Presented.
- Imperial Institute. Technical Reports and Scientific Papers. 8vo.
London 1903. From the Institute.
- Journal of Tropical Medicine. Vol. VI.—4to. *London* 1903.
Subscription.
- Monaco. Musée Océanographique. Bulletin. No. 1.—8vo. *Monaco*
1904. From H.H. The Prince of Monaco.
- Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales
de Madrid. Tomo I. 8vo. *Madrid* 1904. From the Academy.
- Rhodesia Scientific Association. Proceedings. Vol. I.—1899. Small
8vo. *Bulawayo* 1903. From the Association.
- Spolia Zeylanica, issued by the Colombo Museum, Ceylon. Vol. I.
—1903. 8vo. *Colombo*. From the Museum.
- Veröffentlichungen d. Erdmagnetischen Observatoriums bei der K.
Sternwarte in München. Heft I.—4to. *München* 1904.
From the Bavarian Academy of Sciences.
- West Australian Natural History Society. Journal. No. 1.—May
1904. 8vo. *Perth*. From the Society.
-

INSTITUTIONS ON WHICH THE ROYAL SOCIETY IS REPRESENTED.

UNIVERSITIES.

Oxford University—	Representative.	Appointed.
Savilian Professorship of Geometry	The President. (Elector).	<i>Ex officio.</i>
Savilian Professorship of Astronomy.	”	”
Sedleian Professorship of Natural Philosophy.	”	”
Professorship of Experimental Philosophy.	”	”
Wykeham Professorship of Physics.	”	”
Waynflete Professorship of Chemistry.	”	”
Waynflete Professorship of Mineralogy.	”	”
Professorship of Geology.	”	”
Cambridge University—		
Lowdean Professorship of Astronomy and Geometry.	”	”

PUBLIC SCHOOLS.

Governing bodies of:—		
Charterhouse.	Professor Sherrington.	Nov. 27, 1902.
Christ's Hospital.	Professor Armstrong.	Jan. 16, 1896.
Dulwich College.	Professor G. C. Foster.	Jan. 19, 1893.
Eton College.	Sir Henry E. Roscoe.	Dec. 20, 1888.
Harrow School.	Sir Arch. Geikie.	June 16, 1892.
Rugby School.	Sir Arthur Bucker.	Mar. 10, 1892.
Shrewsbury School.	Dr. Pye-Smith.	July 7, 1887.
Westminster School.	Professor Bonney.	Oct. 27, 1881.
Winchester College.	Major P. A. MacMahon.	Feb. 16, 1899.

OTHER INSTITUTIONS.

Athenæum Club (Committee).	The President.	<i>Ex officio.</i>
Lister Institute of Preventive Medicine.	Col. Bruce.	Dec. 10, 1903.
British Museum (Trustee).	The President.	<i>Ex officio.</i>
City and Guilds of London Institute (Governor).	”	”
Hunterian Museum (Trustee).	”	”
Sir John Soane's Museum.	Professor Church.	Jan. 28, 1897.
Joint Scholarships' Board.	Professor Perry.	Nov. 27, 1902.
Advisory Board for Military Education.	Sir W. de W. Abney.	April 30, 1903.
Tropical Diseases Advisory Board.	Sir M. Foster.	Oct. 27, 1904.

The President of the Royal Society is also *ex officio* an honorary Member of the Royal Irish Academy.

OTHER PUBLIC FUNCTIONS PERFORMED BY THE
ROYAL SOCIETY.

1. Government Grant for Scientific Investigations.—Administrators.
For the Regulations see page 100, *supra*. For the History of this Grant see "Record," p. 156.
2. National Physical Laboratory.—Lessees under the Crown, and Trustees of an endowment by the late J. P. Gassiot for the purposes of Kew Observatory. (For scheme of organisation see p. 93.)
3. Lawes Agricultural Trust.—Electors of four members of the Managing Committee.
4. Meteorological Council.—Nominators.

The Council is the official descendant of the Meteorological Department of the Board of Trade, the history of which is given in the Report by the Committee of Inquiry nominated by the Royal Society, the Board of Trade, and the Admiralty respectively, which was printed and presented to Parliament in 1866. This Department was superseded in 1867 by the Meteorological Committee of the Royal Society. In 1877 the Committee transferred their charge to the Meteorological Council, a paid body, consisting of a chairman and four members, nominated by the President and Council of the Royal Society, and approved by the Lords Commissioners of the Treasury, with the Hydrographer of the Admiralty as an official member.

5. Physick Garden of Chelsea.

The history of the early connection of the Physick Garden with the Royal Society will be found in the "Record," p. 147. At present the Society has only a representation upon the Committee of Management of the Garden.

6. Royal Observatory, Greenwich.—Visitors.

The Royal Society were appointed Visitors and Directors in 1710, a function which they continued to perform until the accession of King William IV, when, by the new warrant then issued, the President and six of the Fellows of the Royal Astronomical Society were added to the same number of the Royal Society to constitute the Board of Visitors, the President of the Royal Society being Chairman of the Board. A new warrant was granted by His Majesty King Edward VII in 1901.

7. Standard Weights and Measures.—Custodians.

The Imperial Standard Yard and Pound in actual use for all important comparisons are at the Standards Office. Four copies of each of them are deposited in other places in case of injury or loss of the standards. One of each of these copies is in the custody of the Royal Society.

INSTITUTIONS

ENTITLED

TO RECEIVE THE PHILOSOPHICAL TRANSACTIONS OR
PROCEEDINGS OF THE ROYAL SOCIETY.

Institutions marked **A** are entitled to receive Philosophical Transactions, Series A and Proceedings.

Institutions marked **B** are entitled to receive Philosophical Transactions, Series B, and Proceedings.

Institutions marked **AB** are entitled to receive Philosophical Transactions, Series A and B, and Proceedings.

Institutions marked *p* are entitled to receive Proceedings only.

America (Central).

Mexico.

p. Sociedad Científica "Antonio Alzate."

America (North). (See UNITED STATES and CANADA.)

America (South).

Buenos Ayres.

AB. Museo Nacional.

Caracas.

B. University Library.

Cordova.

AB. Academia Nacional de Ciencias.

Demerara.

p. Royal Agricultural and Commercial Society, British Guiana.

La Plata.

B. Museo de la Plata.

Rio de Janeiro.

p. Observatorio.

Australia.

Adelaide.

p. Royal Society of South Australia.

Brisbane.

p. Royal Society of Queensland.

Melbourne.

p. Observatory.

Australia—*continued.*

- p.* Royal Society of Victoria.
- AB. University Library.

Sydney.

- p.* Australian Museum.
- p.* Geological Survey.
- p.* Linnean Society of New South Wales.
- AB. Royal Society of New South Wales.
- AB. University Library.

Austria.

Agram.

- p.* Jugoslavenska Akademija Znanosti i Umjetnosti.
- p.* Societas Historico-Naturalis Croatica.

Brünn.

- AB. Naturforschender Verein.

Cracow.

- AB. Kaiserliche Akademie der Wissenschaften.

Gratz.

- AB. Naturwissenschaftlicher Verein für Steiermark.

Innsbruck.

- AB. Das Ferdinandeum.
- p.* Naturwissenschaftlich-Medicinischer Verein.

Prague.

- AB. Königliche Böhmishe Gesellschaft der Wissenschaften.

Trieste.

- B. Museo di Storia Naturale.
- p.* Società Adriatica di Scienze Naturali.

Vienna.

- AB. Kaiserliche Akademie der Wissenschaften.
- p.* K.K. Geographische Gesellschaft.
- AB. K.K. Geologische Reichsanstalt.
- B. K.K. Naturhistorisches Hof-Museum.
- B. K.K. Zoologisch-Botanische Gesellschaft.
- p.* Oesterreichische Gesellschaft für Meteorologie.
- A. Von Kuffner'sche Sternwarte.

Belgium.

Brussels.

- B. Académie Royale de Médecine.
- AB. Académie Royale des Sciences.
- B. Musée du Congo.
- B. Musée Royal d'Histoire Naturelle de Belgique.
- p.* Observatoire Royal.
- p.* Société Belge de Géologie, de Paléontologie, et d'Hydrologie.
- p.* Société Malacologique de Belgique.

Belgium—*continued.*

Ghent.

AB. Université.

Liège.

AB. Société des Sciences.

p. Société Géologique de Belgique.

Louvain.

B. Laboratoire de Microscopie et de Biologie Cellulaire.

AB. Université.

Canada.

Fredericton, N.B.

p. University of New Brunswick.

Halifax, N.S.

p. Nova Scotian Institute of Science.

Hamilton.

p. Hamilton Association.

Kingston, Ontario.

AB. Queen's University.

Montreal.

AB. McGill University.

p. Natural History Society.

Ottawa.

AB. Geological Survey of Canada.

AB. Royal Society of Canada.

AB. University.

St. John, N.B.

p. Natural History Society.

Toronto.

p. Toronto Astronomical Society.

p. Canadian Institute.

AB. University.

Windsor, N.S.

p. King's College Library.

Cape Colony.

Cape Town.

A. Observatory.

AB. South African Library.

B. South African Museum.

p. South African Philosophical Society.

Grahamstown.

p. Public Library.

Ceylon.

Colombo.

B. Museum.

Denmark.

Copenhagen.

AB. Kongelige Danske Videnskabernes Selskab.

Egypt.

Alexandria.

AB. Bibliothèque Municipale.

England and Wales.

Aberystwith.

AB. University College.

Bangor.

AB. University College of North Wales.

Birmingham.

AB. Central Free Library.

AB. University.

p. Philosophical Society.

Bolton.

p. Public Library.

Bristol.

p. Merchant Venturers' School.

AB. University College.

Cambridge.

AB. Philosophical Society.

p. Union Society.

AB. University Library.

Cardiff.

AB. Free Library.

AB. University College.

Chatham.

AB. Royal Engineers' Head Quarters.

Cooper's Hill.

AB. Royal Indian Engineering College.

Dudley

p. Dudley and Midland Geological and Scientific Society.

Essex.

p. Essex Field Club.

Falmouth.

p. Royal Cornwall Polytechnic Society.

Greenwich.

A. Royal Observatory.

Harpenden.

AB. Lawes Agricultural Trust.

Kew.

B. Royal Gardens.

England and Wales—continued.

Leeds.

- p.* Philosophical Society.
- AB. Yorkshire College.

Liverpool.

- AB. Free Public Library.
- p.* Literary and Philosophical Society.
- A. Observatory.
- AB. University College.

London.

- AB. Admiralty.
- p.* Anthropological Institute.
- AB. Board of Trade: Electrical Standards Laboratory.
- p.* British Astronomical Association.
- AB. British Museum.
- AB. British Museum (Nat. Hist.).
- AB. Chemical Society.
- A. City and Guilds of London Institute.
- p.* "Electrician," Editor of the.
- B. Entomological Society.
- AB. Geological Society.
- AB. Geological Survey of Great Britain.
- p.* Geologists' Association.
- AB. Guildhall Library.
- A. Institution of Civil Engineers.
- p.* Institution of Electrical Engineers.
- A. Institution of Mechanical Engineers.
- A. Institution of Naval Architects.
- p.* Iron and Steel Institute.
- AB. King's College.
- AB. King's Library.
- B. Linnean Society.
- p.* Lister Institute of Preventive Medicine.
- AB. London Institution.
- p.* London Library.
- A. Mathematical Society.
- p.* Meteorological Office.
- p.* Odontological Society.
- p.* Pharmaceutical Society.
- p.* Physical Society.
- p.* Quekett Microscopical Club.
- p.* Royal Agricultural Society.
- A. Royal Astronomical Society.
- B. Royal College of Physicians.
- B. Royal College of Surgeons.

England and Wales—continued.

- p.* Royal Engineers (for Libraries abroad, six copies).
- p.* Royal Engineers. Head Quarters Library. (*See Chatham.*)
- p.* Royal Geographical Society.
- p.* Royal Horticultural Society.
- p.* Royal Institute of British Architects.
- AB. Royal Institution of Great Britain.
- B. Royal Medical and Chirurgical Society.
- p.* Royal Meteorological Society.
- p.* Royal Microscopical Society.
- p.* Royal Statistical Society.
- AB. Royal United Service Institution.
- A. "Science Abstracts."
- AB. Society of Arts.
- p.* Society of Biblical Archæology.
- p.* Society of Chemical Industry (London Section).
- p.* Standard Weights and Measures Department.
- AB. University College.
- p.* Victoria Institute.
- AB. War Office.
- p.* War Office (Medical Department).
- B. Zoological Society.

Manchester.

- AB. Free Library.
- AB. Literary and Philosophical Society.
- p.* Geological Society.
- AB. Owens College.

Netley.

- p.* Royal Victoria Hospital.

Newcastle.

- AB. Free Library.
- p.* North of England Institute of Mining and Mechanical Engineers.
- p.* Society of Chemical Industry (Newcastle Section).

Norwich.

- p.* Norfolk and Norwich Literary Institution.

Nottingham.

- AB. Free Public Library.

Oxford.

- p.* Ashmolean Society.
- AB. Bodleian Library.
- AB. Radcliffe Library.
- A. Radcliffe Observatory.

Penzance.

- p.* Geological Society of Cornwall.

England and Wales—continued.

Plymouth.

B. Marine Biological Association.

p. Plymouth Institution.

Richmond.

A. National Physical Laboratory, Observatory Department.

Salford.

p. Royal Museum and Library.

Stonyhurst.

p. The College.

Swansea.

AB. Royal Institution.

Teddington.

A. National Physical Laboratory.

Woolwich.

AB. Royal Artillery Library.

Finland.

Helsingfors.

p. Societas pro Fauna et Flora Fennica.

AB. Société des Sciences.

France.

Bordeaux.

p. Académie des Sciences.

p. Faculté des Sciences.

p. Société de Médecine et de Chirurgie.

p. Société des Sciences Physiques et Naturelles.

Caen.

p. Société Linnéenne de Normandie.

Cherbourg.

p. Société des Sciences Naturelles.

Dijon.

p. Académie des Sciences.

Lille.

p. Faculté des Sciences.

Lyons.

AB. Académie des Sciences, Belles-Lettres et Arts.

AB. Université.

Marseille.

AB. Faculté des Sciences.

Montpellier.

AB. Académie des Sciences et Lettres.

B. Faculté de Médecine.

Nantes.

p. Société des Sciences Naturelles de l'Ouest de la France.

France—*continued.***Paris.**

- AB. Académie des Sciences de l'Institut.
- p. Association Française pour l'Avancement des Sciences.
- p. Bureau des Longitudes.
- A. Bureau International des Poids et Mesures.
- p. Commission des Annales des Ponts et Chaussées.
- p. Conservatoire des Arts et Métiers.
- p. Cosmos (M. L'ABBÉ VALETTE).
- AB. École des Mines.
- AB. École Normale Supérieure.
- AB. École Polytechnique.
- AB. Faculté des Sciences de la Sorbonne.
- B. Institut Pasteur.
- AB. Jardin des Plantes.
- A. L'Observatoire.
- p. Revue Générale des Sciences.
- p. Revue Scientifique (MONS. H. DE VARIGNY).
- AB. Service Hydrographique de la Marine.
- p. Société de Biologie.
- AB. Société d'Encouragement pour l'Industrie Nationale.
- AB. Société de Géographie.
- p. Société de Physique.
- B. Société Entomologique.
- AB. Société Géologique.
- p. Société Mathématique.
- p. Société Météorologique de France.

Rennes.

- p. Université.

Toulouse.

- AB. Académie des Sciences.
- A. Faculté des Sciences.

Germany.**Berlin.**

- A. Deutsche Chemische Gesellschaft.
- A. Die Sternwarte.
- p. Gesellschaft für Erdkunde.
- AB. Königliche Preussische Akademie der Wissenschaften.
- A. Physikalische Gesellschaft.

Bonn.

- AB. Universität.

Bremen.

- p. Naturwissenschaftlicher Verein.

Germany—continued.

Breslau.

p. Schlesische Gesellschaft für Vaterländische Kultur.

Brunswick.

p. Verein für Naturwissenschaft.

Carlsruhe. See Karlsruhe.

Charlottenburg.

A. Physikalisch-Technische Reichsanstalt.

Danzig.

AB. Naturforschende Gesellschaft.

Dresden.

p. Verein für Erdkunde.

Emden.

p. Naturforschende Gesellschaft.

Erlangen.

AB. Physikalisch-Medicinische Societät.

Frankfurt-am-Main.

AB. Senckenbergische Naturforschende Gesellschaft.

p. Zoologische Gesellschaft.

Frankfurt-am-Oder.

p. Naturwissenschaftlicher Verein.

Freiburg-im-Breisgau.

AB. Universität.

Giessen.

AB. Grossherzogliche Universität.

Görlitz.

p. Naturforschende Gesellschaft.

Göttingen.

AB. Königliche Gesellschaft der Wissenschaften.

Halle.

AB. Kaiserliche Leopoldino-Carolinische Deutsche Akademie der Naturforscher.

p. Naturwissenschaftlicher Verein für Sachsen und Thüringen.

Hamburg.

p. Naturhistorisches Museum.

AB. Naturwissenschaftlicher Verein.

Heidelberg.

A. Grossherzogliche Sternwarte, Astronomischer Institut.

p. Naturhistorisch-Medizinischer Verein.

AB. Universität.

Jena.

AB. Medicinisch-Naturwissenschaftliche Gesellschaft.

Germany—*continued.***Karlsruhe.**

p. Technische Hochschule.

Kiel.

A. Astronomische Nachrichten.

p. Naturwissenschaftlicher Verein für Schleswig-Holstein.

AB. Universität.

Königsberg.

AB. Königliche Physikalisch-Ökonomische Gesellschaft.

Leipsic.

p. Annalen der Physik und Chemie.

AB. Königliche Sächsische Gesellschaft der Wissenschaften.

Magdeburg.

p. Naturwissenschaftlicher Verein.

Marburg.

AB. Universität.

Munich.

AB. Königliche Bayerische Akademie der Wissenschaften.

p. Zeitschrift für Biologie.

Münster.

AB. Königliche Theologische und Philosophische Akademie.

Potsdam.

A. Astrophysikalisches Observatorium.

Rostock.

AB. Universität.

Strasburg.

AB. Universität.

Tübingen.

AB. Universität.

Würzburg.

AB. Physikalisch-Medicinische Gesellschaft.

Greece.**Athens.**

A. National Observatory.

Holland. (See NETHERLANDS.)**Hungary.****Buda-pest.**

AB. Á Magyar Tudós Társaság. Die Ungarische Akademie der Wissenschaften.

p. Königl. Ungarische Geologische Anstalt.

Hungary—*continued.*

Hermannstadt.

p. Siebenbürgischer Verein für die Naturwissenschaften.

Klausenburg.

AB. Az Erdélyi Muzem. Das Siebenbürgische Museum.

Schemnitz.

p. K. Ungarische Berg- und Forst-Akademie.

India.

Bombay. •

AB. Elphinstone College.

p. Royal Asiatic Society (Bombay Branch).

Calcutta.

AB. Asiatic Society of Bengal.

AB. Geological Museum.

p. Great Trigonometrical Survey of India.

AB. Indian Museum.

p. The Meteorological Reporter to the Government of India.

Madras.

B. Central Museum.

A. Observatory.

Roorkee.

p. Roorkee College.

Ireland.

Armagh.

A. Observatory.

Belfast.

AB. Queen's College.

Cork

AB. Queen's College.

Dublin.

AB. National Library of Ireland.

A. Observatory.

B. Royal College of Surgeons in Ireland.

AB. Royal Dublin Society.

AB. Royal Irish Academy.

AB. Trinity College.

Galway.

AB. Queen's College.

Italy.**Acireale.**

p. Accademia di Scienze, Lettere ed Arti.

Bologna.

AB. Accademia delle Scienze dell' Istituto.

Catania.

AB. Accademia Gioenia di Scienze Naturali.

Florence.

p. Biblioteca Nazionale Centrale.

AB. Museo Botanico.

p. Reale Istituto di Studi Superiori.

Genoa.

p. R. Università.

p. Società Ligustica di Scienze Naturali e Geografiche.

Milan.

AB. Reale Istituto Lombardo di Scienze, Lettere ed Arti.

AB. Società Italiana di Scienze Naturali.

Modena.

p. Le Stazioni Sperimentali Agrarie Italiane.

Naples.

p. Istituto Zoologico, R. Università.

p. Società di Naturalisti.

AB. Società Reale, Accademia delle Scienze.

B. Stazione Zoologica (Dr. DOHRN).

Padua.

p. University.

Palermo.

A. Circolo Matematico.

AB. Consiglio di Perfezionamento (Società di Scienze Naturali ed Economiche).

A. Reale Osservatorio.

Pisa.

p. Il Nuovo Cimento.

p. Società Toscana di Scienze Naturali.

Rome.

p. Accademia Pontificia de' Nuovi Lincei.

p. Rassegna delle Scienze Geologiche in Italia.

AB. Reale Accademia dei Lincei.

A. Reale Ufficio Centrale di Meteorologia e di Geodinamica,
Collegio Romano.

p. R. Comitato Geologico d' Italia.

AB. Società Italiana delle Scienze.

A. Specola Vaticana.

Italy—continued.

Sassari.

p. Università. Istituto Fisiologico.

Siena.

p. Reale Accademia dei Fisiocritici.

Turin.

AB. Biblioteca Nazionale.

p. Laboratorio di Fisiologia.

AB. Reale Accademia delle Scienze.

Venice.

p. Ateneo Veneto.

AB. Reale Istituto Veneto di Scienze, Lettere ed Arti.

Japan.

Tokiô.

p. Asiatic Society of Japan.

AB. Imperial University.

Java.

Batavia.

p. K. Natuurkundige Vereeniging, Weltevreden.

Buitenzorg.

p. Jardin Botanique.

Luxembourg.

Luxembourg.

p. Société des Sciences Naturelles.

Malta.

p. Public Library.

Mauritius.

A. Royal Alfred Observatory.

p. Royal Society of Arts and Sciences.

Netherlands.

Amsterdam.

AB. Koninklijke Akademie van Wetenschappen.

p. K. Zoologisch Genootschap 'Natura Artis Magistra.'

Haarlem.

AB. Hollandsche Maatschappij der Wetenschappen.

p. Musée Teyler.

Leyden.

AB. University.

Rotterdam.

AB. Bataafsch Genootschap der Proefondervindelijke Wijsbe-
goerte.

Netherlands—continued.

Utrecht.

AB. Provinciaal Genootschap van Kunsten en Wetenschappen.

New Zealand.

Wellington.

AB. New Zealand Institute.

Norway.

Bergen.

AB. Bergenske Museum.

Christiania.

AB. Kongelige Norske Frederiks Universitet.

Tromsøe.

p. Museum.

Trondhjem.

AB. Kongelige Norske Videnskabers Selskab.

Portugal.

Coimbra.

AB. Universidade.

Lisbon.

AB. Academia Real das Sciencias.

p. Secção dos Trabalhos Geologicos de Portugal.

Oporto.

p. Annaes de Sciencias Naturaes.**Russia.**

Dorpat.

AB. Université.

Ekaterinoslav.

p. School of Mines.

Irkutsk.

p. Société Impériale Russe de Géographie (Section de la Sibérie Orientale).

Kazan.

AB. Imperatorsky Kazansky Universitet.

p. Société Physico-Mathématique.

Kharkoff.

p. Section Médicale de la Société des Sciences Expérimentales.
Université de Kharkow.

Kieff.

p. Société des Naturalistes.

Kronstadt.

p. Compass Observatory.

Russia—continued.

Moscow.

- AB. Le Musée Public.
- B. Société Impériale des Naturalistes.

Odessa.

- p.* Société des Naturalistes de la Nouvelle-Russie.

Pulkowa.

- A. Nikolai Haupt-Sternwarte.

St. Petersburg.

- AB. Académie Impériale des Sciences.
- B. Archives des Sciences Biologiques.
- AB. Comité Géologique.
- AB. Ministère de la Marine.
- A. Observatoire Physique Central.

Scotland.

Aberdeen.

- AB. University.

Edinburgh.

- AB. Advocates' Library.
- p.* Geological Society.
- p.* Royal College of Physicians (Research Laboratory).
- p.* Royal Medical Society.
- A. Royal Observatory.
- p.* Royal Physical Society.
- p.* Royal Scottish Society of Arts.
- AB. Royal Society.

Glasgow.

- AB. Mitchell Free Library.
- p.* Natural History Society.
- p.* Philosophical Society.
- AB. University.

Servia.

Belgrade.

- p.* Académie Royale de Serbie.

Spain.

Cadiz.

- A. Instituto y Observatorio de Marina de San Fernando.

Madrid.

- p.* Comisión del Mapa Geológico de España.
- AB. Real Academia de Ciencias.

Sweden.

Gottenburg.

AB. Kongl. Vetenskaps och Vitterhets Samhälle.

Lund.

AB. Universitet.

Stockholm.

A. *Acta Mathematica*.

AB. Kongliga Svenska Vetenskaps-Akademie.

AB. Sveriges Geologiska Undersökning.

Upsala.

AB. Universitet.

Switzerland.

Basel.

p. Naturforschende Gesellschaft.

Bern.

p. Naturforschende Gesellschaft.

AB. Schweizerische Naturforschende Gesellschaft.

Geneva.

AB. Institut National Genevois.

p. *Journal de Chimie Physique*.AB. *Société de Physique et d'Histoire Naturelle*.

Lausanne.

p. *Société Vaudoise des Sciences Naturelles*.

Neuchâtel.

p. *Société des Sciences Naturelles*.

Zürich.

AB. Das Schweizerische Polytechnikum.

p. Naturforschende Gesellschaft.

p. Sternwarte.

Tasmania.

Hobart.

p. Royal Society of Tasmania.

Transvaal.

Johannesburg.

AB. Meteorological Department, Observatory.

United States.

Albany.

AB. New York State Library.

United States—continued.

Annapolis.

AB. Naval Academy.

Austin.

p. Texas Academy of Sciences.

Baltimore.

AB. Johns Hopkins University.

Berkeley.

p. University of California.

Boston.

AB. American Academy of Sciences.

B. Boston Society of Natural History.

A. Technological Institute.

Brooklyn.

AB. Brooklyn Library.

Cambridge.

AB. Harvard University.

B. Museum of Comparative Zoology.

Chapel Hill (N.C.).

p. Elisha Mitchell Scientific Society.

Charleston.

p. Elliott Society of Science and Art of South Carolina.

Chicago.

AB. Academy of Sciences.

p. Astrophysical Journal.

p. Field Columbian Museum.

A. Yerkes' Observatory (University of Chicago).

Davenport (Iowa).

p. Academy of Natural Sciences.

Granville (Ohio).

p. Denison University.—Journal of Comparative Neurology.

Ithaca (N.Y.).

A. Journal of Physical Chemistry.

p. Physical Review (Cornell University).

Lawrence.

p. Kansas University.

Madison.

p. Wisconsin Academy of Sciences.

Mount Hamilton (California).

A. Lick Observatory.

United States—*continued.*

New Haven (Conn.).

- AB. American Journal of Science.
- AB. Connecticut Academy of Arts and Sciences.

New York.

- p.* American Geographical Society.
- A. American Mathematical Society.
- p.* American Museum of Natural History.
- AB. Columbia College Library.
- p.* New York Academy of Sciences.
- p.* New York Medical Journal.

Philadelphia.

- AB. Academy of Natural Sciences.
- AB. American Philosophical Society.
- p.* Franklin Institute.
- p.* University of Pennsylvania.
- p.* Wagner Free Institute of Science.

Rochester (N.Y.).

- p.* Academy of Science.

St. Louis.

- p.* Academy of Science.

Salem (Mass.).

- p.* American Association for the Advancement of Science.
- AB. Essex Institute.

San Francisco.

- AB. California Academy of Sciences.

Washington.

- AB. Patent Office.
- AB. Smithsonian Institution.
- AB. United States Coast Survey.
- B. United States Commission of Fish and Fisheries.
- p.* United States Department of Agriculture.
- A. United States Department of Agriculture (Weather Bureau).
- AB. United States Geological Survey.
- AB. United States Naval Observatory.
- p.* University.

West Point (N.Y.).

- AB. United States Military Academy.

CATALOGUE OF OBJECTS AND EXPERIMENTS EXHIBITED
AT THE CONVERSAZIONE HELD IN THE SOCIETY'S
APARTMENTS AT BURLINGTON HOUSE ON MAY 13,
1904.

1. *Exhibited by D. Wilson-Barker, R.N.R.*

Photographs of Clouds.

2. *Exhibited by Mr. Joseph Goold.*

Twin-elliptic figures showing change of phase in one or both ellipses.

3. *Exhibited by Prof. J. P. O'Reilly.*

Series of Geological and other Drawings and Plans.

4. *Exhibited by Messrs. R. and J. Beck.*

Optical Testing Bench.

5. *Exhibited by Mr. R. W. K. Edwards.*

A Radial Area-Scale.

6. *Exhibited by Mr. Francis Fox, M.Inst.C.E.*

1. The Simplon Tunnel.

- (1) Transparent stereoscopic views of the interior of the Simplon Tunnel.
- (2) Specimens of the cutter of the Brandt-Hydraulic Drill.
- (3) Samples of the rocks encountered.
- (4) Photographs of the works and tunnel.

2. The Victoria Falls of the River Zambesi.

- (1) Stereoscopic and other views of the Victoria Falls.
- (2) Photograph of the Arched Cantilever Bridge in course of construction across the gorge by the Rhodesia Railway Company.

7. *Exhibited by Dr. W. N. Shaw, F.R.S.*
Sensitive Barograph, for the study of minor variations of Atmospheric Pressure.
8. *Exhibited by Mr. Arthur E. Smith and Mr. Richard Kerr, F.G.S.*
Examples of Photo-Micrography.
9. *Exhibited by the Royal Meteorological Society.*
Models and Photographs of Large Hailstones.
10. *Exhibited by Mr. W. H. Dines.*
 1. Traces obtained from self-recording instruments sent up by means of kites.
 2. Self-recording instruments from which the traces were obtained.
11. *Exhibited by Mr. R. H. Biffen.*
A Series of Hybrid Wheats illustrating Mendel's Laws.
12. *Exhibited by Mr. Gustav Mann.*
 1. Wax Model of the Marmoset's Brain.
 2. Sections from which the wax model was constructed.
13. *Exhibited by Prof. A. Liversidge, F.R.S.*
The Narraburra Siderite, New South Wales.
14. *Exhibited by The Director of the Geological Survey and Museum.*
 1. Colour-printed Geological Maps.
 2. Geological Model of the Isle of Purbeck.
15. *Exhibited by Mr. J. W. Gordon.*
High Power Microscopy.
16. *Exhibited by Lord Avebury, F.R.S., P.S.A.*
Models illustrative of Mountain building.
17. *Exhibited by Prof. J. A. Fleming, F.R.S.*
Apparatus for the metrical study of Stationary Electric Waves on Spiral Wires.

18. *Exhibited by Prof. Karl Pearson, F.R.S.*
A Photographic Study of the English Skull, 1600–1850.
19. *Exhibited by Dr. G. J. Burch, F.R.S.*
A Cylindrical Telescope for the Rotation of Images.
20. *Exhibited by Dr. A. E. Wright.*
Apparatus and methods employed for measuring, in the case of human blood, its content in agglutinating substances, bactericidal substances, red blood corpuscles, albuminous substances, calcium salts, and salts generally.
21. *Exhibited by Dr. Alan B. Green.*
Photographs illustrative of Induced Radio-activity of Bacteria.
22. *Exhibited by Dr. J. Erskine-Murray, F.R.S.E.*
The Differentiator, a machine recording as a curve the values of the rate of change of any variable quantity which can be represented by a curve.
23. *Exhibited by the Director, Royal Botanic Gardens, Kew.*
 1. A New Natural Order of Plants, the *Amphipterygiaceæ*, Hemsley and Rose.
 2. Fruits of *Melocanna bambusoides*, an exalbuminous, viviparous Bamboo.
 3. *Hydnophytum longifolium* (*Rubiaceæ*), *Fiji Islands*.
 4. *Dischidia rafflesiana* (*Asclepiadaceæ*), *Malaya*.
 5. *Aspidium anomalum*, *Ceylon*.
24. *Exhibited by Mr. E. Sanger-Shepherd.*
Examples showing the application of Natural Colour Photography to the production of lantern slides of spectra for lecture and educational purposes.
25. *Exhibited by Prof. H. B. Dixon, F.R.S., and Mr. G. W. A. Foster, B.Sc.*
Apparatus for determining the Ignition-point of gases.
26. *Exhibited by Sir W. de W. Abney, K.C.B., F.R.S.*
Colour Photographs shown by Spectrum Colours.

27. *Exhibited by Mr. Sherard Cowper-Coles.*

Experiments to show the action that occurs between metals at a temperature many hundreds of degrees below their melting point.

28. *Exhibited by Mr. W. Hibbert and Mr. H. E. Dick.*

Edison's Secondary Battery (or Accumulator) for Automobiles.

29. *Exhibited by Mr. A. W. Hill, M.A.*

Plants and Photographs from the High Andes of Bolivia and Peru.

30. *Exhibited by Prof. Wyndham R. Dunstan, F.R.S., Director of the Imperial Institute.*

1. Specimens illustrative of Cotton Cultivation in British Colonies and Dependencies.
2. Map showing the "cotton belt" and the British and Foreign areas in which cotton is now commercially or experimentally cultivated (from Professor Dunstan's Report on Cotton Cultivation in the British Empire and Egypt).
3. Mineral and rock specimens from Ceylon and Southern Nigeria.
4. Specimens of the Seeds of *Hevea brasiliensis* (Para rubber tree) from the Straits Settlements.

31. *Exhibited by Mr. S. Skinner, M.A.*

Experiments on Lubrication showing Cavitation.

32. *Exhibited by Mr. W. Bennett.*

Experiments with non-homocentric pencils.

33. *Exhibited by The Cambridge Scientific Instrument Company, Limited.*

1. Vibrograph for recording vibrations photographically.
2. Micro-manometer.

34. *Exhibited by Mr. R. Threlfall, F.R.S.*

Stream Gauge for indicating the rate of delivery of air or gas by a pipe.

35. *Exhibited by Mr. H. Jackson, F.C.S.*

Some new Phosphorescent Materials.

36. *Exhibited by Prof. W. A. Hervey, F.R.S.*

The Pearl-Oyster Fisheries of Ceylon.

- (1) Samples of Ceylon Pearl-Oysters in various stages of growth.
- (2) Charts and plans of the Gulf of Manaar, showing where the Pearl banks (- Paars ?) are situated.
- (3) Photographs and diagrams illustrating the methods employed at the Fisheries.
- (4) Specimens showing the structure of the Pearl-Oyster, the position of the pearls in the body, and specimens of the pearl-inducing Cestode parasites.
- (5) Microscopic preparations showing the structure of the pearls and of the Cestode parasites which gives rise to pearl-formation.
- (6) Plates and other illustrations from the Report on the Ceylon Pearl-Oyster Fisheries.

37. *Exhibited by Col. R. E. Crompton, C.B.*

Electrical instruments of precision.

38. *Exhibited by Sir J. Norman Lockyer, K.C.B., F.R.S.*

Photographs and Diagrams illustrating Solar and Meteorological changes, and a series of photographs to determine the relative temperatures of the stars.

39. *Exhibited by the Royal Astronomical Society.*

Ten Transparencies from negatives taken with the Rumford Spectroheliograph of the Yerkes Observatory by Prof. G. E. Hale, and Mr. F. Ellerman.

40. *Exhibited by Prof. E. J. Garwood, F.G.S.*

A set of Coloured Lantern Slides of Microscopic Sections of Igneous Rocks, etc.

41. *Exhibited by Mr. J. Franklin-Adams, F.R.A.S.*

Transparencies and Prints in illustration of a Photographic Atlas of the Heavens; photographed at the Royal Observatory, Capetown, 1903-4.

42. *Exhibited by Prof. J. B. Farmer, F.R.S., Mr. J. E. S. Moore, and Mr. C. E. Walker.*

Microscopic slides illustrating nuclear division in cells of malignant growths of man.

43. *Exhibited by Prof. H. Marshall Ward, D.Sc., F.R.S.*

Microscopic preparations illustrating the parasitism of the Rust Fungi or *Uredineæ*.

44. *Exhibited by Dr. G. H. F. Nuttall, F.R.S.*

Ticks and Tick-transmitted Diseases.

45. *Exhibited by Mr. G. H. Grosvenor.*

Nematocysts of *Æolids*.

46. *Exhibited by Mr. Frederick Keeble and Mr. F. W. Gamble.*

Microscopical preparations and Diagrams of the Chromatophores of the Higher Crustacea.

47. *Exhibited by the Marine Biological Association.*

International North Sea Investigations. Results of work during 1903, from the Plymouth and Lowestoft laboratories.

48. *Exhibited by Mr. V. H. Blackman.*

Microscopical preparations to show the Fertilization and Alternation of Generations in the *Uredineæ*.

49. *Exhibited by Mr. H. H. Cunynghame, C.B.*

Improved Muffle and Melting Furnaces for use in laboratories or art studios.

50. *Exhibited by Dr. A. Scott, F.R.S.*

Specimens of Methyl and other derivatives of Sulphur, Selenium and Tellurium.

51. *Exhibited by the National Physical Laboratory.*

1. Microphone-buzzer (with partially tuned Telephone) giving a nearly pure note of 2,000 vibrations per second.
2. Apparatus used to investigate the Distribution of Temperature in the field coils of Electric Machinery.
3. Apparatus for rapid electric thermometry.

52. *Exhibited by Mr. T. C. Porter.*

A Method of Mechanically Reinforcing Sounds.

53. *Exhibited by Mr. Bertram Blount.*

Electric Resistance Furnaces for laboratory use.

54. *Exhibited by Mr. P. Heele.*

Large direct Vision Spectroscope.

55. *Exhibited by Prof. E. J. Garwood, F.G.S.*

Portable Sounding Machine for Mountain Lakes.

*56. *Exhibited by Prof. W. A. Herdman, F.R.S.*

The recent Investigation of the Ceylon Pearl Fisheries, illustrated by lantern slides.

*57. *Exhibited by Mr. Francis Fox, M.Inst.C.E.*

Lantern Slides, illustrative of (1) operations at the Simplon Tunnel. (2) The Victoria Falls and Gorge of the River Zambesi, and proposed Bridge.

*58. *Exhibited by the Hon. C. A. Parsons, F.R.S.*

Demonstration of the Auxetophone.

* Lecture Room Demonstrations

THE CROONIAN LECTURES.

LIST OF LECTURERS AND SUBJECTS.

1738. Alexander Stuart.
 "On the Motion of the Heart, founded on some Anatomical
 Observations and Experiments."
 Phil. Trans., Vol. 40, Supplement; Vol. 41, p. 675.
1739. Frank Nicholls.
 "An Enquiry into Muscular Motion."
 Journal Book, Vol. XVIII. p. 70.
1740. Alexander Stuart.
 "On the Peristaltic Motion of the Intestines."
 Journal Book, Vol. XVIII. p. 227—9.
1740. Alexander Stuart.
 "Microscopical Observations on several parts of live Frogs."
 Journal Book, Vol. XVIII. p. 290.
1741. James Douglas.
 "Description of the several Muscles, Membranes and parts
 belonging to the Uvula of the Palate, and concerned in its
 action; as also of the several parts subservient to the uses
 of the Tuba Eustachiana."
 Journal Book, Vol. XVIII. p. 377.
1742. James Douglas.
 "Description and Structure of the Human Bladder, with
 the Uses of its Muscles and Membranes."
 Journal Book, Vol. XVIII. p. 419.
- 1744.* James Parsons.
 "An Introductory Discourse on Muscular Motion."
 Phil. Trans., Vol. 43, Supplement.
1745. James Parsons.
 "On Muscular Motion." Phil. Trans., Vol. 43, Supplement.
1746. James Parsons.
 "Description of the several Muscles of the Face; with their
 particular Functions and Uses."
 Phil. Trans., Vol. 44, Part I., Supplement.

* Lecture revived, "the deficiency of the Fund being made good by the Rents."

1747. Browne Langrish.
"On the Theory of Muscular Motion."
Phil. Trans., Vol. 44, Part II., Supplement.
1750. James Parsons.
"On Muscular Motion." Journal Book, Vol. XXI. p. 357.
1751. James Parsons.
"Critical Remarks upon the Motion and Uses of the Human Pelvis."
Journal Book, Vol. XXI. pp. 641, 652
- 1752 and 1753. Not recorded.
- 1754 to 1758. Charles Morton.
Minutes of Council, Vol. IV. pp. 168, 189 :
and Annual Accounts.
- 1759 and 1760. Not recorded.
1761. Charles Morton. (†)
Annual Accounts.
- 1762 to 1774. Not recorded.
- 1775 and 1776. John Hunter.
Minutes of Council, Vol. VI. pp. 283, 385
- 1777 to 1781. John Hunter.
"On the Construction and Application of Muscles and the Power by which they are actuated."
Journal Book, Vol. XXXI. p. 194 :
and Annual Accounts, 1781.
1782. John Hunter.
"On the Density and Firmness of a Muscle as contributing to its Strength and Agility."
Journal Book, Vol. XXXI. p. 194.
1783. Not recorded.
1784. Foart Simmons.
"On the Irritability of the Muscular Fibres."
Journal Book, Vol. XXXI. p. 642.
1785. Edward Whittaker Grey.
"An Examination into Haller's Theory of Muscular Motion."
Journal Book, Vol. XXXII. p. 25.
1786. Edward Whittaker Grey.
"On the Effects of different kinds of Salts applied as Stimulants on the Muscles."
Journal Book, Vol. XXXII. p. 468.
1787. George Fordyce.
"On Muscular Motion." Phil. Trans., Vol. 78, p. 23.

1788. Sir Gilbert Blane, Bart.
 "On the Nature of the Muscles, and on the Theory of Muscular Motion." Journal Book, Vol. XXXIII. p. 268.
1789. Sir William Blizard.
 "On the Theory of Muscular Motion." Journal Book, Vol. XXXIV. p. 9.
1790. Sir Everard Home, Bart.
 "On the Mechanism employed in producing Muscular Motion." Journal Book, Vol. XXXIV. p. 200.
1791. Matthew Baillie.
 "A general view of the Nature of the Muscles, and an enumeration of the most striking facts connected with the Theory of their Motion." Journal Book, Vol. XXXIV. p. 419.
1792. Not recorded:
1793. Sir Everard Home, Bart.*
 "On Mr. Hunter's Experiments to ascertain whether the Crystalline Humour of the Eye be muscular." Journal Book, Vol. XXXV. p. 166.
1794. Sir Everard Home, Bart.
 "On the Crystalline Humour of the Eye." Phil. Trans. 1795.
1795. Sir Everard Home, Bart.
 "On the Mechanism employed in producing Muscular Motion" Phil. Trans. 1795.
1796. Sir Everard Home, Bart.
 "On the Crystalline Humour of the Eye." Phil. Trans. 1796.
1797. John Abernethy.
 "A general Review of the latest Opinions relative to Animal Life and Motion." Journal Book, Vol. XXXVI. p. 340.
1798. Sir Everard Home, Bart.
 "Experiments and Observations upon the Structure of Nerves." Phil. Trans. 1799.
1799. Sir Everard Home, Bart.
 "On the Structure and Uses of the Membrana Tympani." Phil. Trans. 1800.
1800. Sir Everard Home, Bart.
 "On the Irritability of Nerves." Phil. Trans. 1801.

* The decease of Mr. Hunter took place before the Lecture, on which he was engaged by appointment of the Council, was completed.

1801. Sir Everard Home, Bart.
"On the power of the Eye to adjust itself to different distances when deprived of the Crystalline Lens."
Phil. Trans. 1802.
1802. Not recorded.
1803. John Pearson.
"On Muscular Motion."
Journal Book, Vol. XXXVIII. p. 137.
1804. Sir Anthony Carlisle.
"On Muscular Motion."
Phil. Trans. 1805.
1805. Sir Anthony Carlisle.
"On the Arrangement and Mechanical Action of the Muscles of Fishes."
Phil. Trans. 1806.
1806. John Pearson.
"Remarks on Muscular Power, and on some of the circumstances by which it is increased, diminished, or finally abolished."
Journal Book, Vol. XXXIX. p. 176.
1807. Sir Anthony Carlisle.
"On the Natural History and Chemical Analysis of the substances which constitute the Muscles of Animals."
Journal Book, Vol. XXXIX. p. 451.
1808. Thomas Young.
"On the Functions of the Heart and Arteries."
Phil. Trans. 1809.
1809. William Hyde Wollaston.
"Observations on the Mode of Action of Voluntary Muscles, and on the causes which derange, and assist, the Action of the Heart and Blood Vessels."
Phil. Trans. 1810.
1810. Benjamin Collins Brodie.
"Physiological Researches, respecting the Influence of the Brain on the Action of the Heart, and on the Generation of Animal Heat."
Phil. Trans. 1811.
- 1811 and 1812. Not recorded.
1813. Benjamin Collins Brodie.
"On the Influence of the Nervous System on the Action of the Muscles in general and of the Heart in particular."
Journal Book, Vol. XII. p. 347.
- 1814 to 1816. Not recorded.
1817. Sir Everard Home, Bart.
"On the Changes the Blood undergoes in the act of Coagulation."
Phil. Trans. 1818.

1818. Sir Everard Home, Bart.
 "On the Conversion of Pus into Granulations, or New Flesh."
 Phil. Trans. 1819.
1819. Sir Everard Home, Bart.
 "A further Investigation of the component parts of the Blood."
 Phil. Trans. 1820.
1820. Sir Everard Home, Bart.
 "Microscopical Observations on the following subjects:—On the Brain and Nerves; showing that the Materials of which they are composed exist in the Blood; on the Discovery of Valves in the branches of the *vas brevis*, lying between the villous and muscular coats of the Stomach; on the Structure of the Spleen."
 Phil. Trans. 1821.
1821. Sir Everard Home, Bart.
 "On the Anatomical Structure of the Eye; illustrated by Microscopical Drawings, executed by F. Bauer."
 Phil. Trans. 1822.
1822. Francis Bauer.
 "Microscopical Observations on the Suspension of the Muscular Motions of the *Vibrio Tritici*."
 Phil. Trans. 1823.
1823. Sir Everard Home, Bart.
 "On the Internal Structure of the Human Brain, when examined in the Microscope, as compared with that of Fishes, Insects and Worms."
 Phil. Trans. 1824.
1824. Sir Everard Home, Bart.
 "On the existence of Nerves in the Placenta."
 Phil. Trans. 1825.
1825. Sir Everard Home, Bart.
 "On the Structure of a Muscular Fibre from which are derived its Elongation and Contraction."
 Phil. Trans. 1826.
1826. Sir Everard Home, Bart.
 "An Enquiry into the mode by which the Propagation of the Species is carried on, in the Common Oyster, and in the large Fresh-water Muscle."
 Phil. Trans. 1827.
1827. Sir Everard Home, Bart.
 "On the Muscles peculiar to Organs of Sense in particular Quadrupeds and Fishes."
 Journal Book, Vol. XLV. p. 143.
1828. Not appointed.
1829. Sir Everard Home, Bart.
 "A Report on the Peculiarities met with in the Stomach of the Zariffa."
 Journal Book, Vol. XLV. p. 580.

- 1830 to 1856. Not appointed.
1857. James Paget.
"On the Cause of the Rhythmic Action of the Heart."
Proceedings Vol. 8
1858. Thomas Henry Huxley.
"On the Theory of the Vertebrate Skull." Proceedings, Vol. 9.
1859. Not appointed.
1860. James Bell Pettigrew.
"On the Arrangement of the Muscular Fibres of the Ventricular Portion of the Heart of the Mammal."
Proceedings, Vol. 10.
Phil. Trans., 1864.
1861. Charles Édouard Brown-Séquard.
"On the Relations between Muscular Irritability, Cadaveric Rigidity, and Putrefaction." Proceedings, Vol. 11.
1862. Albert Kölliker.
"On the Termination of Nerves in Muscles, as observed in the Frog: and on the disposition of the Nerves in the Frog's Heart."
Proceedings, Vol. 12.
1863. Joseph Lister.
"On the Coagulation of the Blood." Proceedings, Vol. 12.
1864. Hermann Helmholtz.
"On the Normal Motions of the Human Eye in relation to Binocular Vision." Proceedings, Vol. 13.
1865. Lionel S. Beale.
"On the ultimate Nerve-fibres distributed to Muscle and some other Tissues, with Observations upon the Structure and probable Mode of Action of a Nervous Mechanism."
Proceedings, Vol. 14.
1866. Not appointed.
1867. J. S. Burdon-Sanderson.
"On the Influence exercised by the Movements of Respiration on the Circulation of the Blood." Phil. Trans., Vol 157.
1868. Not appointed.
1869. Not appointed.
1870. Augustus V. Waller.
"On the Results of the Method, introduced by the Author, of investigating the Nervous System, more especially as applied to the Elucidation of the Functions of the Pneumogastric and Sympathetic Nerves in Man."
Proceedings, Vol. 18.
- 1871 and 1872. Not appointed.

1873. Benjamin Ward Richardson.
 "On Muscular Irritability after Systemic Death."
 Proceedings, Vol. 21.
1874. David Ferrier.
 "The Localization of Function in the Brain."
 Proceedings, Vol. 22 (Abstr.).
1875. David Ferrier.
 "Experiments on the Brain of Monkeys. Second Series."
 Phil. Trans. 1875.
1876. G. J. Romanes.
 "Preliminary Observations on the Locomotor System of
 Medusæ."
 Phil. Trans. 1876.
1877. J. S. Burdon-Sanderson and F. J. M. Page.
 "On the Mechanical Effects, and on the Electrical Disturbance,
 consequent on Excitation of the Leaf of *Diosæa muscipula*."
 Proceedings, Vol. 25.
1878. H. N. Moseley.
 "On the Structure of the Stylasteridæ: a Family of the
 Hydroid Stony Corals."
 Phil. Trans. 1878.
1879. W. K. Parker.
 "On the Structure and Development of the Skull in the
 Lacertilia. Part I. On the Skull of the Common Lizards
 (*Lacerta agilis*, *L. viridis*, and *Zootoca vivipara*)."
 Phil. Trans. 1879.
1880. Rev. S. Houghton.
 "On some Elementary Principles in Animal Mechanics, No. IX.
 The Relation between the Maximum Work done, the Time
 of Lifting, and the Weights lifted by the Arms."
 Proceedings, Vol. 30.
1881. G. J. Romanes and J. C. Ewart.
 "Observations on the Locomotor System of Medusæ."
 Phil. Trans. 1881.
1882. W. H. Gaskell.
 "On the Rhythm of the Heart of the Frog, and on the Nature
 of the Action of the Vagus Nerve."
 Phil. Trans. 1882.
1883. H. N. Martin.
 "On the Direct Influence of Gradual Variations of Temperature
 upon the Rate of Beat of the Dog's Heart."
 Phil. Trans. 1883.
- 1884 and 1885. Not appointed.
1886. L. C. Wooldridge.
 "The Coagulation of the Blood."
 Proceedings, Vol. 40.
1887. H. G. Seeley.
 "On *Pareiasaurus bombidens* (Owen) and the Significance
 its Affinities to Amphibians, Reptiles, and Mammals."
 Phil. Trans., B, 1888.

1888. W. Kühne (Heidelberg).
"Ueber die Entstehung der Vitalen Bewegung."
Proceedings, Vol. 44.
1889. Dr. Roux (Institut Pasteur).
"Les Inoculations Préventives." Proceedings, Vol. 46.
1890. H. Marshall Ward.
"The Relations between Host and Parasite in certain Epidemic Diseases of Plants." Proceedings, Vol. 47.
1891. Francis Gotch and Victor Horsley.
"On the Mammalian Nervous System; its Functions and their Localisation determined by an Electrical Method."
Phil. Trans., B, Vol. 182.
1892. Angelo Mosso (Turin).
"Les Phénomènes psychiques et la Température du Cerveau."
Phil. Trans., B, Vol. 183.
1893. Rudolf Virchow (Berlin).
"The Position of Pathology among Biological Studies."
Proceedings, Vol. 53.
1894. S. Ramón y Cajal (Madrid).
"La fine Structure des Centres Nerveux." Proceedings, Vol. 55.
1895. T. W. Engelmann (Utrecht).
"On the Nature of Muscular Contraction."
Proceedings, Vol. 57.
1896. Augustus D. Waller.
"Observations on Isolated Nerve." Phil. Trans., B, Vol. 188.
1897. Charles S. Sherrington.
"The Mammalian Spinal Cord as an Organ of Reflex Action."
Phil. Trans., B, Vol. 190.
1898. Wilhelm Pfeffer (Leipzig).
"The Nature and Significance of Functional Metabolism in the Plant."
Proceedings, Vol. 63.
1899. J. S. Burdon Sanderson.
"On the Relation of Motion in Animals and Plants to the Electrical Phenomena which are associated with it."
Proceedings, Vol. 65.
1900. Paul Ehrlich (Frankfort-on-M.).
"On Immunity with Special Reference to Cell Life."
Proceedings, Vol. 66.
1901. C. Lloyd Morgan.
"Studies in Visual Sensation." Proceedings, Vol. 68.
1902. Arthur Gamgee.
"On certain Chemical and Physical Properties of Hæmoglobin."
Proceedings, Vol. 70.
1903. C. Timiriazeff.
"The Cosmical Function of the Green Plant."
Proceedings, Vol. 72.
1904. Ernest Henry Starling and William Maddock Bayliss.
"The Chemical Regulation of the Secretory Process."
Proceedings, Vol. 73.

THE BAKERIAN LECTURES.

LIST OF LECTURERS AND SUBJECTS

1775. Peter Woulfe.

“Experiments made in order to ascertain the nature of some Mineral Substances, and in particular to see how far the Acids of Sea-Salt and of Vitriol contribute to Mineralize Metallic and other Substances.”—Part I.

Journal Book, Vol. XXIX. p. 135.

1776 and 1777. Peter Woulfe.

1778. John Ingen-Housz.

“Electrical Experiments to explain how far the Phenomena of the Electrophorus may be accounted for by Dr. Franklin’s Theory of Positive and Negative Electricity.”

Phil. Trans., Vol. 68.

1779. John Ingen-Housz.

“Improvements in Electricity.”

Phil. Trans., Vol. 69.

1780. Tiberius Cavallo.

“Thermometrical Experiments and Observations.”

Phil. Trans., Vol. 70.

1781. Tiberius Cavallo.

“An Account of some Thermometrical Experiments.”

Phil. Trans., Vol. 71.

1782. Tiberius Cavallo.

“An Account of some Experiments relating to the Property of Common and Inflammable Airs of pervading the Pores of Paper.”

Journal Book, Vol. XXXI. p. 303.

1783. Tiberius Cavallo.

“Description of an improved Air Pump.”

Journal Book, Vol. XXXI. p. 401.

1784. Tiberius Cavallo.

“An Account of some Experiments made with the new improved Air Pump.”

Journal Book, Vol. XXXI. p. 631.

1785. Tiberius Cavallo.

“Magnetical Experiments and Observations.”

Phil. Trans., Vol. 76.

1786. Tiberius Cavallo.
"Magnetical Experiments and Observations."
Phil. Trans., Vol. 77.
1787. Tiberius Cavallo.
"Of the Methods of manifesting the Presence, and ascertaining
the Quality, of small Quantities of Natural or Artificial
Electricity."
Phil. Trans., Vol. 78.
1788. Tiberius Cavallo.
"On an Improvement in the Blow Pipe."
Journal Book, Vol. XXXIII. p. 257.
1789. Tiberius Cavallo.
"Magnetical Experiments and Observations."
Journal Book, Vol. XXXIV. p. 3.
1790. Tiberius Cavallo.
"A Description of a new Pyrometer."
Journal Book, Vol. XXXIV. p. 208.
1791. Tiberius Cavallo.
"On the Method of Measuring Distances by means of Telescopes
furnished with Micrometers."
Journal Book, Vol. XXXIV. p. 429.
1792. Tiberius Cavallo.
"An Account of the Discoveries concerning Muscular Motion,
which have been lately made, and are commonly known by
the name of Animal Electricity."
Journal Book, Vol. XXXIV. p. 609.
1793. George Fordyce.
"An Account of a New Pendulum."
Phil. Trans. 1794.
1794. Samuel Vince;
"Observations on the Theory of the Motion and Resistance of
Fluids; with a Description of the Construction of Experi-
ments, in order to obtain some fundamental Principles."
Phil. Trans. 1795
- 1795 and 1796. Samuel Vince. (?)
1797. Samuel Vince.
"Experiments upon the Resistance of Bodies moving in Fluids."
Phil. Trans. 1798.
1798. Samuel Vince.
"Observations upon an unusual Horizontal Refraction of the
Air; with Remarks on the Variations to which the lower
Parts of the Atmosphere are sometimes subject."
Phil. Trans. 1799.

1799. Samuel Vince. (?)
1800. Thomas Young.
 "On the Mechanism of the Eye." Phil. Trans. 1801.
1801. Thomas Young.
 "On the Theory of Light and Colours." Phil. Trans. 1802.
1802. William Hyde Wollaston.
 "Observations on the Quantity of Horizontal Refraction; with
 Method of measuring the Dip at Sea." Phil. Trans. 1803.
1803. Thomas Young.
 "Experiments and Calculations relative to Physical Optics."
 Phil. Trans. 1804.
1804. Samuel Vince.
 "Observations on the Hypotheses which have been assumed to
 account for the cause of Gravitation from Mechanical
 Principles." Journal Book, Vol. XXXVIII. p. 334.
1805. William Hyde Wollaston.
 "On the Force of Percussion." Phil. Trans. 1806.
1806. Sir Humphry Davy, Bart.
 "On some Chemical Agencies of Electricity." Phil. Trans. 1807.
1807. Sir Humphry Davy, Bart.
 "On some new Phenomena of Chemical Changes produced by
 Electricity, particularly the Decomposition of the fixed
 Alkalies, and the Exhibition of the new Substances which
 constitute their Bases." Phil. Trans. 1808.
1808. Sir Humphry Davy, Bart.
 "An Account of some new Analytical Researches on the Nature
 of certain Bodies, particularly the Alkalies, Phosphorus,
 Sulphur, Carbonaceous Matter, and the Acids hitherto
 undecomposed; with some general Observations on
 Chemical Theory." Phil. Trans. 1808, pp. 39, 450.
1809. Sir Humphry Davy, Bart.
 "On some new Electro-Chemical Researches, on various objects,
 particularly the Metallic Bodies from the Alkalies and
 Earths; and on some Combinations of Hydrogen."
 Phil. Trans. 1810
1810. Sir Humphry Davy, Bart.
 "On some of the Combinations of Oxymuriatic Gas and
 Oxygen, and on the Chemical Relations of these Principles
 to Inflammable Bodies." Phil. Trans. 1811.
1811. Sir Humphry Davy, Bart. (?)

1812. William Hyde Wollaston.
"On the Elementary Particles of certain Crystals."
Phil. Trans. 1813.
1813. William Thomas Brande.
"On some new Electro-Chemical Phenomena."
Phil. Trans. 1814.
- 1814 to 1818. No record.
1819. William Thomas Brande.
"On the Composition and Analysis of the inflammable Gaseous
Compounds resulting from the destructive Distillation of
Coal and Oil; with some Remarks on their relative heating
and illuminating power."
Phil. Trans. 1820.
1820. Captain Henry Kater.
"On the best kind of Steel, and form, for a Compass
Needle."
Phil. Trans. 1821.
1821. Captain Edward Sabine.
"An Account of Experiments to determine the Amount of the
Dip of the Magnetic Needle in London, in August 1821;
with Remarks on the Instruments which are usually
employed in such determinations."
Phil. Trans. 1822.
1822. No record.
1823. John F. W. Herschel.
"On certain Motions produced in Fluid Conductors when
transmitting the Electric Current."
Phil. Trans. 1824.
- 1824 to 1825. No record.
1826. Sir Humphry Davy, Bart.
"On the Relations of Electrical and Chemical Changes."
Phil. Trans. 1826.
1827. George Pearson.
"Researches to discover the Faculties of Pulmonary Absorption
with respect to Charcoal."
Journal Book, Vol. XLV. p. 201.
1828. William Hyde Wollaston.
"On a Method of rendering Platina malleable."
Phil. Trans. 1829.
1829. Michael Faraday.
"On the Manufacture of Glass for Optical Purposes."
Phil. Trans. 1830.
1830. No record.

1831. No record.
1832. Michael Faraday.
 "Experimental Researches in Electricity; Second Series."
 Abstracts of Papers, Vol. III. p. 95.
1833. Samuel Hunter Christie.
 "Experimental Determination of the Laws of Magneto-Electric
 Induction in different masses of the same metal, and of its
 intensity in different metals."
 Abstracts of Papers, Vol. III. p. 177.
1834. Not appointed.
1835. Charles Lyell.
 "On the Proofs of a gradual Rising of the Land in certain parts
 of Sweden." Phil. Trans. 1835.
1836. John William Lubbock.
 "On the Tides of the Port of London." Phil. Trans. 1836.
1837. William Henry Fox Talbot.
 "Further Observations on the Optical Phenomena of Crystals."
 Phil. Trans. 1837.
1838. James Ivory.
 "On the Theory of the Astronomical Refractions."
 Phil. Trans. 1838.
1839. William Snow Harris.
 "Inquiries concerning the Elementary Laws of Electricity."
 Phil. Trans. 1839.
1840. George Biddell Airy.
 "On the Theoretical Explanation of an apparent new Polarity
 of Light." Phil. Trans. 1840.
1841. George Newport.
 "On the Organs of Reproduction and the Development of the
 Myriapoda." Phil. Trans. 1841.
1842. James David Forbes.
 "On the Transparency of the Atmosphere and the Law of
 Extinction of the Solar Rays in passing through it."
 Phil. Trans. 1842.
1843. Charles Wheatstone.
 "An Account of several new Instruments and Processes for
 determining the Constants of a Voltaic Circuit."
 Phil. Trans. 1843.

1844. Richard Owen.
"A Description of certain Belemnites, preserved, with a great proportion of their soft parts, in the Oxford Clay, at Christian-Malford, Wilts." Phil. Trans. 1844.
1845. Charles Giles Bridle Daubeny.
"Memoir on the Rotation of Crops, and on the Quantity of Inorganic Matters abstracted from the Soil by various Plants under different circumstances." Phil. Trans. 1845.
1846. James David Forbes.
"Illustrations of the Viscous Theory of Glacier Motion." Phil. Trans. 1846.
1847. William Robert Grove.
"On certain Phenomena of Voltaic Ignition and the Decomposition of Water into its constituent Gases by Heat." Phil. Trans. 1847.
1848. Rev. William Whewell.
"Researches on the Tides." Thirteenth Series. On the Tides of the Pacific, and on the Diurnal Inequality. Phil. Trans. 1848.
1849. Michael Faraday.
"Experimental Researches in Electricity." Twenty-Second Series. Phil. Trans. 1849.
1850. Thomas Graham.
"On the Diffusion of Liquids." Phil. Trans. 1850.
1851. Michael Faraday.
"Experimental Researches in Electricity." Twenty-Fourth Series. Phil. Trans. 1851.
1852. Charles Wheatstone.
"Contributions to the Physiology of Vision. Part II. On some remarkable and hitherto unobserved Phenomena of Binocular Vision (continued)." Phil. Trans. 1852.
1853. Col. Edward Sabine.
"On the Influence of the Moon on the Magnetic Declination at Toronto, St. Helena, and Hobarton." Phil. Trans. 1853.
1854. Thomas Graham.
"On Osmotic Force." Phil. Trans. 1854.
1855. John Tyndall.
"On the Nature of the Force by which Bodies are repelled from the Poles of a Magnet; to which is prefixed an account of some experiments on Molecular Influences." Phil. Trans. 1855.

1856. William Thomson.
 "On the Electrodynamic Qualities of Metals." Phil. Trans. 1856.
1857. Michael Faraday.
 "Experimental Relations of Gold (and other metals) to Light." Phil. Trans. 1857.
1858. John Peter Gassiot.
 "On the Stratifications and Dark Band in Electrical Discharges as observed in Torricellian Vacua." Phil. Trans. 1858.
1859. Edward Frankland.
 "Researches on Organo-metallic Bodies." Fourth Memoir. Phil. Trans. 1859.
1860. William Fairbairn.
 "Experimental Researches to determine the Density of Steam at different Temperatures, and to determine the Law of Superheated Steam." Phil. Trans. 1860.
1861. John Tyndall.
 "On the Absorption and Radiation of Heat by Gases and Vapours, and on the Physical Connection of Radiation, Absorption and Conduction." Phil. Trans. 1861.
1862. Warren De La Rue.
 "On the Total Solar Eclipse of July 18, 1860, observed at Rivabelloea, near Miranda de Ebro, in Spain." Phil. Trans. 1862.
1863. Henry Clifton Sorby.
 "On the Direct Correlation of Mechanical and Chemical Forces." Proceedings, Vol. 12, 1863.
1864. John Tyndall.
 "Contributions to Molecular Physics: being the Fifth Memoir of Researches on Radiant Heat." Phil. Trans. 1864.
1865. Henry Enfield Roscoe.
 "On a Method of Meteorological Registration of the Chemical Action of Total Daylight." Phil. Trans. 1865.
1866. James Clerk Maxwell.
 "On the Viscosity or Internal Friction of Air and other Gases." Phil. Trans. 1866.
1867. Frederick Augustus Abel.
 "Researches on Gun-Cotton. (Second Memoir.) On the Stability of Gun-Cotton." Phil. Trans. 1867.

1868. Henry Enfield Roscoe.
"Researches on Vanadium." Phil. Trans. 1868.
1869. Thomas Andrews.
"The Continuity of the Gaseous and Liquid States of Matter." Phil. Trans. 1869.
1870. John William Dawson.
"On the Pre-Carboniferous Flora of North Eastern America, and more especially on that of the Erian (Devonian) Period." Proceedings, Vol. 18.
1871. Charles William Siemens.
"On the Increase of Electrical Resistance in Conductors with Rise of Temperature, and its Application to the Measure of Ordinary and Furnace Temperatures; also on a simple Method of measuring Electrical Resistances." Proceedings, Vol. 19.
1872. William Kitchen Parker.
"On the Structure and Development of the Skull of the Salmon (*Salmo salar*, L.)." Proceedings, Vol. 20.
1873. Earl of Rosse.
"On the Radiation of Heat from the Moon, the Law of its Absorption by our Atmosphere, and its variation in Amount with her Phases." Proceedings, Vol. 21.
1874. J. Norman Lockyer.
"Researches in Spectrum Analysis in connection with the Spectrum of the Sun." Part III. Phil. Trans. 1874.
1875. William Grylls Adams.
"On the Forms of Equipotential Curves and Surfaces and on Lines of Flow." Proceedings, Vol. 24.
1876. Thomas Andrews.
"On the Gaseous State of Matter." Proceedings, Vol. 24.
1877. William Crawford Williamson.
"On the Organization of the Fossil Plants of the Coal Measures." Part IX. Phil. Trans. 1878.
1878. William Crookes.
"On Repulsion resulting from Radiation. Part V." Phil. Trans. 1878.
1879. William Crookes.
"On the Illumination of Lines of Molecular Pressure and the Trajectory of Molecules." Phil. Trans. 1879.

1880. Captain William de W. Abney.
 "On the Photographic Method of Mapping the least refrangible end of the Solar Spectrum." Phil. Trans. 1880.
1881. John Tyndall.
 "Action of free Molecules on Radiant Heat, and its conversion thereby into sound." Phil. Trans. 1882.
1882. Heinrich Debus.
 "On the Chemical Theory of Gunpowder." Phil. Trans. 1882.
1883. William Crookes.
 "On Radiant Matter Spectroscopy: the Detection and wide Distribution of Yttrium." Phil. Trans. 1883.
1884. Arthur Schuster.
 "Experiments on the Discharge of Electricity through Gases. Sketch of a Theory." Proceedings, Vol. 37.
1885. William Huggins.
 "On the Corona of the Sun." Proceedings, Vol. 39.
1886. Captain William de W. Abney and Major-General Edward Robert Festing.
 "Colour Photometry." Phil. Trans. 1886.
1887. Joseph John Thomson.
 "On the Dissociation of some Gases by the Electric Discharge." Proceedings, Vol. 42 (Abstract).
1888. J. Norman Lockyer.
 "Suggestions on the Classification of the various Species of Heavenly Bodies. A Report to the Solar Physics Committee." Proceedings, Vol. 44.
1889. Arthur William Rücker and Thomas Edward Thorpe.
 "A Magnetic Survey of the British Isles for the Epoch January 1, 1886." Phil. Trans., A, Vol. 181.
1890. Arthur Schuster.
 "The Discharge of Electricity through Gases. Preliminary Communication." Proceedings, Vol. 47.
1891. George Howard Darwin.
 "On Tidal Prediction." Phil. Trans., A, Vol. 182.
1892. James Thomson.
 "On the Grand Currents of Atmospheric Circulation." Phil. Trans., A, Vol. 183.
1893. Harold B. Dixon.
 "The Rate of Explosion in Gases." Phil. Trans., A, Vol. 184.

1894. Thomas Edward Thorpe and J. W. Rodger.
"On the Relations between the Viscosity (internal friction) of Liquids and their Chemical Nature."
Phil. Trans., A, Vol. 185.
1895. A. G. Vernon Harcourt and William Esson.
"On the Laws of Connexion between the Conditions of a Chemical Change and its Amount. III. Further Researches on the Reaction of Hydrogen Dioxide and Hydrogen Iodide."
Phil. Trans., A, 1895.
1896. William Chandler Roberts-Austen.
"On the Diffusion of Metals."
Phil. Trans., A, 1896.
1897. Osborne Reynolds and W. H. Moorby.
"On the Mechanical Equivalent of Heat."
Phil. Trans., A, Vol. 190.
1898. William James Russell.
"Further Experiments on the Action exerted by certain Metals and other Bodies on a Photographic Plate."
Proceedings, Vol. 63.
1899. James Alfred Ewing and W. Rosenhain.
"The Crystalline Structure of Metals."
Phil. Trans., A, Vol. 193.
1900. William Augustus Tilden.
"On the Specific Heat of Metals and the Relation of Specific Heat to Atomic Weight."
Phil. Trans., A, Vol. 194.
1901. James Dewar.
"The Nadir of Temperature and Allied Problems."
Proceedings, Vol. 68.
1902. Lord Rayleigh.
"On the Law of the Pressure of Gases between 75 and 150 Millimetres of Mercury."
Phil. Trans., A, Vol. 198.
1903. C. T. Heycock and F. H. Neville.
"On the Constitution of the Copper-tin Series of Alloys."
Phil. Trans. A, Vol. 202.
1904. Ernest Rutherford.
"The Succession of Changes in Radio-active Bodies."
Phil. Trans., A, Vol. 204.
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AWARD OF MEDALS, 1904.

The Copley Medal to Sir William Crookes, F.R.S., for his long-continued researches in spectroscopic chemistry, on electrical and mechanical phenomena in highly rarefied gases, on radio-active phenomena, and other subjects.

The Rumford Medal to Prof. Ernest Rutherford, F.R.S., for his researches on radio-activity, particularly for his discovery of the existence and properties of the gaseous emanations from radio-active bodies.

A Royal Medal to Colonel David Bruce, F.R.S., for his valuable researches in the pathology of Malta fever, Nagana, and Sleeping Sickness, and especially for his discoveries as regards the exact causes of these diseases.

A Royal Medal to Prof. William Burnside, F.R.S., for his researches in mathematics, particularly in the theory of groups.

The Davy Medal to Prof. William Henry Perkin, Jun., F.R.S., for his notable discoveries in organic chemistry.

The Darwin Medal to Mr. William Bateson, F.R.S., for his important contribution to the theory of organic evolution by his researches on variation and heredity.

The Hughes Medal to Sir Joseph Wilson Swan, F.R.S., for his invention of the incandescent lamp, and his other inventions and improvements in the practical applications of electricity.

The Sylvester Medal to Prof. Georg Cantor for his brilliant researches in the theories of aggregates and of sets of points of the arithmetic continuum, of transfinite numbers, and Fourier's Series.

STUDENTSHIPS.

The Joule Studentship is held by Mr. J. A. Harker, to assist him in his investigations on thermometry and on the specific heat of steam at high pressures, and other thermal subjects.

The Mackinnon Studentships are held by—

Mr. B. Cookson for (a) Investigation of the Constant of Aberration with a novel form of instrument and a new method of observing; (b) Determination of the mass and compression of Jupiter, and of corrections to the elements of the orbits of his satellites from a series of 45 photographs; and

Mr. L. Doncaster for (a) Research on early development of the egg, &c., in various species of sawflies; (b) Breeding experiments with (1) certain species of Lepidoptera; (2) domestic animals.

ANNIVERSARY MEETING.

1904.

On Wednesday, November 30, the Anniversary Meeting of the Society was held in the apartments in Burlington House.

SIR WILLIAM HUGGINS, K.C.B., O.M., D.C.L., LL.D.,
President, in the Chair.

The Report of the Auditors was presented as follows:—

“During the past year the total Ordinary Receipts on General Purposes Account, including the Treasury Grant of £1,000 for Publications, amount to £7,220 18s. 9d.

“The total Ordinary Expenditure for the same period on General Purposes, including grants for Publications to extraneous bodies, amounts to £7,029 17s. 2d., showing an excess of Income over Expenditure of £191 1s. 7d.

“The Assets of the Society on the General Purposes Account amount to £7,343 11s. 1d., against which there are liabilities amounting to £4,260 14s. 10d., leaving a balance to the credit of the Account of £3,082 16s. 3d.

“The Trust Funds Accounts show a balance of Receipts over Expenditure amounting to £5,169 5s. 5d., of which £3,443 8s. 8d. appears on the General Trust Funds Accounts, and £1,725 16s. 9d. on the Account of the National Physical Laboratory. The accounts of the latter are, however, separately audited by a Professional Auditor.”

The thanks of the Society were voted to the Treasurer and Auditors.

The Secretary read the lists of Fellows elected and deceased since last Anniversary. (*See pp. 41, 186, 240.*)

The following Report of the Council, which had been previously distributed to the Fellows, having been taken as read, was, on the motion of the President, received:—

REPORT OF THE COUNCIL.

PRESENTED TO THE ROYAL SOCIETY, NOVEMBER 30, 1904.

International Association of Academies.

One of the chief events of the year has been the second General Assembly of the International Association of Academies which was held at Whitsuntide in the rooms of the Royal Society, Directing Academy of the Association for the past three years. The General Assembly was attended by 70 delegates, representative of all the constituent Academies of the Association. The Royal Society was represented by the President, Sir William Huggins; the Treasurer, Mr. A. B. Kempe; Prof. Larmor (*Sec.*), Mr. Francis Darwin (*For. Sec.*), Sir Michael Foster, President of the Council of the Association; Prof. Armstrong. Mr. Bateson, Prof. George Darwin, Prof. Forsyth, Sir David Gill, Lord Kelvin, Prof. Liversidge, Sir Norman Lockyer, Prof. J. Milne, Sir William Ramsay, Lord Rayleigh, Sir Arthur Rucker, Prof. Schuster, and Dr. Waller.

Prof. Schuster was nominated by the Council to deliver the vote of the Royal Society.

At the opening of the meeting Sir Michael Foster was chosen President of the Assembly, and Lord Reay Vice-President, the latter thus becoming President of the Section of Letters.

The Assembly held plenary and sectional sittings throughout the greater part of Whitsun week. Among the scientific subjects dealt with, some of which are referred to more at length *infra*, were the following:—the status as regards the Association of new international organisations; the progress of the International Catalogue of Scientific Literature; international co-operation in researches involving geodetic measurements, and, more particularly, in seismological investigations; a proposed magnetic survey around a parallel of latitude; the extension of the South African Geodetic Arc to Egypt, and ultimately to a junction with the Russian Arcs; international co-operation in investigations of atmospheric electricity; a special international organisation for investigating the central nervous system; and the publication of the works of Leibniz. In connection with several of these subjects special committees were appointed, which are now at work.

It has been the pleasant duty of the Royal Society, as the Directing Academy, thankfully to acknowledge the ample arrangements that

were made, both publicly and in private, for the entertainment of the Delegates. His Majesty the King graciously expressed his desire to receive the Delegates, who journeyed to Windsor on the 26th of May, and were there entertained by His Majesty. The Lord Mayor gave a banquet in honour of the Association. The Royal Society entertained the Delegates at dinner; and the University of London arranged a special reception in their honour at the University. The Universities of Oxford and Cambridge, acting in concert, invited the Delegates at the end of their Session to visit those Universities, and conferred honorary degrees upon a number of the foreign representatives of Science and of Letters.

At the close of the meeting, Vienna was chosen by a unanimous vote as the place of meeting of the next General Assembly. This choice automatically constitutes the Imperial Academy of Sciences, Vienna, the Directing Academy of the Association for the ensuing three years; and the Academy will accordingly take over that office from the Royal Society on January 1, 1905.

A complete protocol of the proceedings of the Assembly has been drawn up, and will be issued before the end of the year.

African Geodetic Arc.

The President and Council have again had their attention directed to the geodetic survey now in progress in South Africa under the control of Sir David Gill, which was, at the instance of the Royal Society, adopted as one of the projects of the International Association of Academies, at their Meeting in Paris in 1901. The subject of the extension of the Arc beyond the Zambesi was brought up, at the instance of the Royal Society, at the recent Meeting of the Association in London, and, in pursuance of the Report then adopted, the President and Council forwarded to H.M. Secretary of State for Foreign Affairs a request that he would bring the matter to the attention of the Egyptian Government, with the view of their providing funds sufficient to defray the cost of this extension.

In reply, a letter was received from the Foreign Office stating that Lord Lansdowne fully appreciates the importance of the work which it is proposed to carry out in connection with geodetic measurements in Africa, and had consulted Lord Cromer on the subject, but that there were considerable difficulties in the way of providing the money necessary for the execution of the work.

Subsequent negotiations give ground for hoping that the desired co-operation of the Egyptian Government may yet be obtained. It is understood that the Imperial German Government would entertain favourably a proposal that they should become responsible for the portion of the arc which would traverse German East Africa.

The Russian representative at the International Association expressed the hope, on behalf of the Imperial Academy of Sciences of St. Petersburg, that the arc would be ultimately connected through Syria with the Russian network, and thus extend continuously to Lapland; and, in consequence, it was resolved that Diplomatic action be taken with a view to the extension of Struve's Arc to Egypt.

International Aeronautics.

The subject of international investigation into the meteorology of the upper atmosphere, which was referred to in the last Report of the Council, came before them again during the past summer, when a request was received from H.M. Government for the advice of the Royal Society as to the official participation of Great Britain in the fourth Congress of the International Scientific Commission of Aerostation. The Council referred the Government to the previous correspondence on the subject, which hinged on this country becoming responsible for part of the expense of the organization. They recommended that a scientific representative of Great Britain should be appointed to attend the Congress at St. Petersburg in August, and suggested the name of Dr. W. N. Shaw, F.R.S., as Delegate. The Council were informed that Dr. Shaw had been appointed, and he attended the Congress.

International Laboratory of Physiology on Monte Rosa.

The President and Council have accepted the permanent duty of nomination to two posts in the supplementary Laboratory and Hostel, which have been established at Col d'Olen, through the agency of Prof. Mosso, as an adjunct to the existing International Laboratory of Physiology near the summit of Monte Rosa.

These nominations by the Royal Society had been made a condition of the donation by Dr. Ludwig Mond, F.R.S., of a sum of £400 towards the expense of establishing the Laboratory; and it has been a great satisfaction to the President and Council to co-operate with Dr. Mond in extending the valuable work which is being done under Prof. Mosso's direction.

Royal Society Catalogue of Scientific Papers.

The work of completing the Catalogue to the end of the XIX Century is progressing. On October 1, 1903, 58 serials, with a total of 67,267 titles, had been completed, as regards the final period, 1884 to 1900, including the first sorting of the index slips. On October

4, 1904, this list had been increased by 28 other serials, with 33,125 titles, which have been copied and sorted. The present stage of preparation of this last instalment of the Catalogue (1884-1900) is as follows:—

			Periodicals finished.	Titles sorted.
October 1, 1903	..	..	58	67,267
October 4, 1904	..	..	28	33,125
Total			86	100,392

In addition to these, 7,827 titles have been copied but not sorted.

The number of papers indexed is less than the number of titles, since one paper may have several index titles. Each paper requires at least two slips, one for the Authors' Catalogue and one for each index title.

On October 1, 1903, 93,125 titles had been received from the referees, who are engaged in indexing the various serials, preparatory to copying and arranging the titles for press. On October 1, 1904, 203,289 had been received, so that 110,164 titles have been received during the twelve months.

The copying of the titles in the serials concerned with several sciences is delayed by the work which is being done from the Zoological Record, for until all the indexed titles taken from this source have been prepared, it has not been considered advisable to begin the complete transcription of titles from those "mixed" serials which contain Zoological papers.

During the last twelve months, 170,694 slips have been copied from the Zoological Record, partly for the last instalment of the Authors' Catalogue and partly for the Subject Index for the whole century. Thus the titles from the Zoological Records for 1893 and 1895-1900 inclusive have now been prepared, and all have been copied for press with the exception of the *Insecta* for 1893 and 1895; for 1894 all are prepared and copied except the *Insecta*, and considerable portions of 1889-92 are also finished.

The great bulk of material to be dealt with renders this final part of the Catalogue comparable in extent with all the previous part put together, and the provision of funds sufficient to complete the enterprise remains a subject of anxiety.

The indexing and numbering of the slips for the subject index for the century that had already been made from the twelve published volumes of the Royal Society's Catalogue of the literature from 1800 to 1883 has been continued; 82,811 have been done by the referees during the year, and about 11,400 have been done by the staff in the office.

The following statistics of slips prepared will show the present condition of this portion of the material for the Index (1800-83):—

Mathematics	11,362
Physics	9,952
Chemistry	38,827
Astronomy	2,248
Meteorology	about 6,000
Geology	26,377
Geography	about 4,000
Botany	25,309
Zoology	7,527
Physiology.. ..	24,549
Biography	about 2,000
Miscellaneous	1,400
	<hr/>
	159,851
	<hr/>

International Catalogue of Scientific Literature.

The whole of the second annual issue of the International Catalogue of Scientific Literature has been published, with the exception of the volumes of Botany and Zoology, which are now being printed. The volumes of the third annual issue are in preparation, and several of them are already in the press.

A supplementary List of Journals has also been issued. This list contains the Austrian periodicals, and also additions to the previous list of journals that are examined, in the preparation of the Catalogue, by the Regional Bureaus of eighteen other countries.

The number of entries in the Author Catalogue of the first annual issue was 43,447, and the total number of entries in that issue was 149,768.

The numbers of books and papers indexed in the volumes of the second annual issue are as follows:—

A Mathematics	1,843	K Palæontology	638
B Mechanics	841	L General Biology	689
C Physics	2,433	M Botany	6,339
D Chemistry	5,632	N Zoology	7,131
E Astronomy	1,228	O Anatomy	1,424
F Meteorology	1,988	P Anthropology	1,861
G Mineralogy	1,307	Q Physiology	9,671
H Geology,	1,702	R Bacteriology	3,132
J Geography	2,022		

The total number of entries in the Author Catalogue of the second annual issue is therefore 49,876, an increase of 6,429, or about 15 per

cent. more than the number in the first annual issue. It will be found that an increase has occurred in volumes F, G, H, J, M, N, O, P, Q and R, while volumes A, B, C, D, E, K and L are slightly smaller in the second issue than the corresponding volumes in the first issue.

The total number of Catalogue cards received by the Central Bureau from the beginning of the undertaking to October, 1904, was 446,288. These cards roughly cover the period 1901-1903, thus giving an average of about 150,000 per annum.

The financial support given by the different countries is shown in the following list. It will be seen that New Zealand now appears as a contracting body.

	£
Austria	165
Canada	119
Cape Colony	109
Denmark	102
Egypt	17
Finland	45
France	754
Germany	901
Greece	34
Holland	133
Hungary	68
India (and Ceylon)	471
Italy	459
Japan	255
Mexico	85
New South Wales	34
New Zealand	17
Norway	85
Nova Scotia	17
Orange River Colony	17
Poland	17
Portugal	17
Queensland	34
Russia	512
South Australia	34
Sweden	85
Switzerland	119
United Kingdom	765
United States	1,251
Victoria	17
Western Australia	17
	<hr/> <hr/> £6,755

An independent audit of the accounts of the Catalogue, carried out by Messrs. W. B. Keen and Co. in April, 1904, showed that subscriptions and sales were just sufficient to cover the cost of the first annual issue, but that no margin was left to meet the cost of any future expansion. It is therefore very desirable that the Catalogue should be made more widely known, so that additional subscriptions may be obtained.

A meeting of the International Council of the Catalogue to prepare for the International Convention, which will meet in July next to revise the undertaking, was held in the Rooms of the Royal Society on May 23rd and 24th, 1904, when the following members were present:— Prof. H. E. Armstrong (Great Britain) in the Chair, Dr. W. T. Blandford (India), Prof. Dr. A. von Böhm (Austria), Dr. J. Brunchorst (Norway), Prof. A. Famintzin (Russia), Dr. M. Knudsen (Denmark), Prof. D. J. Korteweg (Holland), Prof. A. Liversidge (New South Wales), Mons. D. Métaxas (Greece), Prof. R. Nasini (Italy), Prof. H. Poincaré (France), Prof. Chas. de Than (Hungary), and Prof. D. O. Uhlworm (Germany).

At this meeting the following resolution was unanimously adopted:—

“That, in view of the success already achieved by the International Catalogue of Scientific Literature, and of its great importance to scientific workers, it is imperative to continue the publication of the Catalogue beyond the first five annual issues.

“That this Resolution be communicated to the Regional Bureaus, requesting them to bring it under the notice of the Contracting Bodies and to obtain the necessary guarantees for the continuance of the work.”

The opinion of each of the members present was that the country, of which he was the delegate, would continue its support of the Catalogue providing the other Contracting Bodies agreed to do so.

The meeting made arrangements for a revision of the Schedules, and dealt with various matters connected with the work of the Catalogue.

Government Grant for Scientific Investigations. Expenses of Special Government Enquiries.

In June last the attention of the Lords Commissioners of H.M. Treasury was called to the fact that whereas the President and Council have frequently been requested by various departments of the Government either to advise them upon, or in some cases to undertake the supervision and control of, and in others the entire responsibility for, various scientific investigations of national importance, no provision has been made by Government to meet expenses to which the Society has necessarily been put in acceding to these requests. It

was also pointed out that a large portion of the work undertaken by the Society with regard to the investigations under consideration was effected by Committees. the members of which gave their services gratuitously, and frequently at considerable inconvenience to themselves; and the President and Council suggested that, where the services of distinguished men of science are thus freely rendered, every facility should be afforded to them which may lighten their labours in connection with these investigations, and that, at least, they should not be hampered by the inability of the Society to defray the cost of furnishing them with printed copies of documents which must be read and considered by them.

This action of the Council has resulted in H.M. Treasury approving of the addition of the following clause to the regulations for administering the Government Grant:—

“The President and Council of the Royal Society may in each year set aside out of the Reserve Fund such sum as they may consider desirable to provide for any expenditure which may be incurred by the Royal Society (including expenditure on printing, clerks’ salaries, and office expenses) in undertaking, controlling, supervising or advising upon matters which the President and Council may, at the request of the Government, undertake, control, supervise, or advise upon.”

Other amendments to the regulations have also been approved by H.M. Treasury, the most important one providing that the Grant shall be administered by the President and Council of the Royal Society, the function of the General Committee being limited to the selection of those persons to whom grants are to be made, to the determination of the amounts of the various grants, and the conditions on which they are granted.

The necessity for this amendment was brought home to the President and Council by a difficulty which arose last year, when they were obliged to initiate legal proceedings against a grantee. The fact that the regulation then in force provided that the grant should be “administered by a General Committee, &c.,” rendered it uncertain whether the Royal Society had power to sue.

Under the regulations the Council has, on the recommendation of the Government Grant Committee, made grants this year amounting to £3,194 10s. This amount includes a preliminary grant of £500 to the Joint Permanent Eclipse Committee to cover the expense of instruments and preparations for observations of the total solar Eclipse of 1905.

A sum of £500 has, in accordance with the regulations, been placed at the disposal of the President and Council to meet any

pressing demands upon the funds which may be made before the next annual meeting of the Government Grant Committee.

The unallotted balance of the Grant (£105 10s.) was carried to the Reserve Fund Account.

Sleeping Sickness.

The investigation of this disease in Uganda was continued after Colonel Bruce's return to England, by Dr. Nabarro and Captain Greig, of the Indian Medical Service. Dr. Nabarro returned home towards the end of last year; and Captain Greig, with the assistance of Lieutenant Gray, an officer of the Army Medical Department, seconded for that purpose, has since been carrying on the experiments under the general direction of Colonel Bruce. Captain Greig, it is understood, leaves Uganda at the end of this year, when he will be replaced by Lieutenant Tulloch, R.A.M.C. In the meantime a further report (No. IV.) by Colonel Bruce has been published, and its general conclusions, briefly stated in the last report of the Council—namely, that the Sleeping Sickness is caused by the entrance into the blood and thence into the cerebro-spinal fluid of a species of Trypanosoma (*T. gambiense*), and that these trypanosomes are transmitted from the sick to the healthy by a species of Tsetse fly (*Glossina palpalis*)—have been confirmed by subsequent observations. The efforts of the observers are now being directed to the attempt to discover a means of eliminating the trypanosomes from the blood and tissues of the infected in the early stages, and before severe damage has been done to the nervous centres. In the meantime the Royal Society Committee has advised the Government to adopt such preventive measures as are found practicable, for protecting a non-infected area where the carrier fly is found, from the incursion of emigrants from the infected areas.

Antarctic Expedition and Investigation.

The Antarctic ship "Discovery," accompanied by the Relief ships "Morning" and "Terra Nova," returned safely in March last to Lytleton, and a "Summary of Proceedings" was forwarded thence by Capt. Scott by post to the Presidents of the Royal and Royal Geographical Societies.

The "Discovery" arrived in England at the beginning of September, when a joint letter of welcome from the President and the President of the Royal Geographical Society was despatched to Capt. Scott. The Officers and members of the Expedition were entertained at luncheon by the two Societies. A letter of congratulation and thanks has also been sent by the President and Council on behalf of the Royal Society to all who participated in the Expedition.

The Council trust that the scientific results of the Expedition will prove very valuable ; the collections and observations are now being dealt with in accordance with the scheme agreed upon between the two Societies.

The Natural History Specimens and Notes and Drawings have been sent to the British Museum (Natural History Department), to be preserved there as part of the National Collection, the Trustees of the Museum having agreed to organise and undertake the publication of these results of the Expedition, under the editorship of the Director of the Museum.

The laborious duty of arranging for the reduction and publication of the Magnetic and Meteorological Observations made by the Expedition has been undertaken by the Royal Society. Two special expert Committees have been appointed, and are already dealing with these two classes of material.

As regards the Magnetic Observations, the Hydrographic Department of the Admiralty has undertaken the reduction of about one-third of the material, and the remaining two-thirds, consisting of the slow-run Magnetograms, remain to be dealt with. The Committee for Magnetism have accordingly arranged that these Observations shall be reduced, under the superintendence of Dr. Chree, their Secretary, in the Observatory Department of the National Physical Laboratory ; and the Royal Society has undertaken responsibility for the cost of these reductions, to the extent of £400, by an advance from the Donation Fund, in the full hope that this expenditure will be refunded out of the proceeds of the sale of the "Discovery."

The Committees have further arranged for dealing with other observations as follows:—Prof. Milne has been requested to undertake the Seismological records : the Atmospheric Electricity and Aurora Polaris observations will be handed over to the Meteorological Office to be dealt with under the superintendence of Mr. C. T. R. Wilson, F.R.S. : the gravity Observations have been referred to the National Physical Laboratory.

The reduction of the Meteorological Observations has been undertaken by the Meteorological Council with the aid of a sum of £500 guaranteed by the Royal Geographical Society in anticipation of the sale of the "Discovery." It is hoped that the publication of these results will be undertaken by H.M. Stationery Office.

The Committees are working as far as possible in concert with the authorities engaged in the reduction of the observations of the German and Scottish Antarctic Expeditions, which in part covered the same period of time.

It is proposed that the special scientific results of the Expedition shall be published in a uniform series of volumes similar to the published records of the "Challenger" Expedition.

Mediterranean Fever.

In February last a letter was received from the Colonial Office asking whether the Royal Society would be willing to appoint an Advisory Board in this country for the purpose of supervising investigations into Mediterranean Fever, to be carried out by a Commission representing the Navy, the Army, and the Civil Government of Malta.

The matter was referred to the Tropical Diseases Committee of the Society, which had superintended the investigations into Malaria and Sleeping Sickness; and upon their advice the Council decided to accede to the request of the Colonial Office, provided that the appointment of investigators rested with the Royal Society, and that all expenses in connection with the investigation were borne by the Government. These conditions were accepted by the Government with a modification, which the Council acceded to at the particular request of H.M. Treasury, viz., that the Royal Society should participate by defraying (out of the Government Grant Reserve Fund) the cost of scientific equipment to an amount not exceeding £200. The Advisory Board was constituted as a sub-committee of the Tropical Diseases Committee, with Colonel Bruce, F.R.S., as Chairman. Members of the Commission of investigation were nominated, with the approval of this Committee, by the Navy, the Army, and the Civil Government of Malta; and Colonel Bruce himself went out to Malta on behalf of the Committee to start the inquiry, which is now in active progress.

Radium Research.

Early in the year, a letter was received from the Goldsmiths' Company, stating that they were desirous of aiding the prosecution of original research in connection with radium, and inviting the Royal Society to accept the responsibility of the proper application of any grant which might be made to them by the Company for the purpose.

The President and Council accepted the duty, and have received from the Court of the Goldsmiths' Company a grant of £1,000 "for the purpose of aiding the prosecution of original research work in connection with the character and properties of radium."

The administration of this grant has been confided to the President of the Royal Society, acting with such advice as he may think fit to obtain. Applications for grants will be treated as confidential, and Reports on work done by aid of the Fund are to be submitted to the Royal Society. Memoirs describing such work, wherever published, are to be prefaced by a statement that the work was carried out by the aid of a grant made by the Royal Society from the Radium Research Fund of the Goldsmiths' Company.

The President has nominated a small Committee to advise him in the administration of the grant, but its operations are for the moment suspended, owing to the difficulties at present experienced in obtaining a supply of radium.

Treasury Inquiry into the Meteorological Office.

In December, 1902, the Lords of the Treasury appointed a Committee, under the Chairmanship of Sir Herbert Maxwell, F.R.S., M.P., to inquire into and report upon the administration of the Parliamentary Grant by the Meteorological Council, and to make such recommendations as might seem to them to increase the utility of the Grant.

The Report of the Committee was issued in May last as a Parliamentary Paper. While expressing general approval of the administration of their service by the Meteorological Council, the Committee comment forcibly on the insufficiency of the funds remaining over for progressive Meteorological research. They advise that the service should be attached to one of the great Government Departments, in which case the present Council would not be required. The saving of the fees of the Council, together with the release from payment of the cost of instruments supplied to the Royal Navy to the extent of about £500 per annum, and the release from payments to the Post Office of about £2,000 per annum, would then enable the expenditure to balance with the Grant. They conclude as follows :

In default of an increase to the Grant, the small increased expenditure which we have recommended would have either to be postponed, or to be met from economies on other branches of the work of the Office.

It will be noted that we have not included in the figures above given any increase in the average amount of the Grant allocated to scientific research, nor have we found means of providing for increased telegraph expenditure which the adoption of the recommendations in paragraph 65 of the Report will very probably entail on the Post Office.

The evidence before us has shown conclusively the importance of further scientific research, for which we trust that funds may be forthcoming in the near future.

The Council are at present in communication with H.M. Treasury with regard to the conditions under which the Royal Society might become responsible for the administration of the Meteorological service for a further period.

National Physical Laboratory.

The National Physical Laboratory has continued its work with success during the year, the last of the five for which the original annual grant of £4,000 was made by the Treasury.

This fact has been prominently before the Committee at its various meetings. In reply to an enquiry by the Chairman, a letter was received from Sir E. W. Hamilton to the effect that while there was no idea of stopping the grant, the question before H.M. Treasury was whether there should be an increase in its amount, and suggesting that the Committee should formulate "constructive proposals" with detailed estimates of the expenditure, both capital and recurring, required to put the Laboratory on a satisfactory footing. Accordingly this was done, and a memorandum on the future organization and expenditure of the Laboratory, which was drawn up by the Executive Committee on February 19, 1904, was sent to the Treasury by the President and Council, who strongly supported the proposals of the Committee.

The main recommendations of the memorandum were (1) that a sum of nearly £30,000 was required for capital expenditure, and (2) that the annual grant should be raised in the course of four years to £10,000; while, with a view to supporting these proposals, a request was made for an official inquiry into the work and organization of the Laboratory.

To this request the Financial Secretary of the Treasury replied, stating that the question of the increase must stand over until the estimates for 1905-06 were under consideration, and suggesting that meanwhile the Executive Committee should consider which of the new works were of the most pressing importance, and make application accordingly.

In answer, a further memorandum was prepared, pointing out that the question at issue was whether the Laboratory is to be allowed to remain undeveloped in its present condition, with its limited powers and opportunities, or whether it is to be adequately developed, and ultimately placed on a footing similar to that of the corresponding institutions in other countries, and asking that the First Lord of the Treasury would receive a deputation to support the request already made "That an enquiry might be instituted into the work and organization of the National Physical Laboratory with a view to laying down the lines that ought to be followed in its future development."

In consequence of this request, a conference took place early in August at the House of Commons between the Prime Minister, the Chancellor of the Exchequer, and the President of the Board of Trade on the one hand, and Lord Rayleigh, Sir F. Hopwood, the Treasurer and Senior Secretary of the Royal Society, with the Director, representing the Laboratory, at which the matter was discussed.

The donations and subscriptions promised to the Laboratory, in most cases for five years, have increased, and now reach a total of about £2,000.

The work and responsibilities of the Laboratory have also increased. Two important papers have been published during the year in the "Philosophical Transactions," one by Dr. Harker "On the High Temperature Standards of the National Physical Laboratory," the other by Mr. F. E. Smith, "On the Construction of some Mercury Standard of Resistance." Dr. Stanton has communicated to the Institution of Civil Engineers his work on the pressure of a uniform steady current of air; while Dr. Carpenter and Mr. Keeling read before the Iron and Steel Institute the results of a valuable research into the range of solidification and the critical ranges of two carbon alloys.

Among important enquiries conducted for outside bodies may be noted one on gutta-percha for the Silvertown India-rubber and Gutta-percha Company. The experiments on insulating materials for the Engineering Standards Committee are complete, as is also an enquiry of great interest into the distribution of temperature in the field coils of dynamos and motors.

The special screw-cutting lathe mentioned in last year's Report is installed, and has been working satisfactorily for some time.

The connection between the Laboratory and the Electrical Standards Committee of the British Association is being maintained by the construction at the Laboratory for Prof. Ayrton of the ampère balance designed by him and the late Prof. Viriamu Jones.

The testing of apparatus has increased greatly during the year. In particular the amount of work for the Admiralty has grown largely. One interesting piece of work was the tests for much of the English electrical apparatus for the St. Louis International Exhibition.

Work has been begun on the new magnetic observatory at Eskdale Muir, for which a sum of £3,000 was provided in the Treasury estimates for the year. This will allow of the completion of the road making, fencing, water supply, and foundations of the buildings. The thanks of the Committee are due to Mr. Oldrieve, the officer of the Office of Works in charge, for his care in carrying out their instructions. Mr. Oldrieve hopes to complete the buildings next year. The method of meeting the annual cost of the observatory is still under the consideration of the Treasury.

While the report is one of progress, the Committee of the Laboratory feel that with adequate financial support they might do much more. It is not yet sufficiently recognised how substantial is the assistance the Laboratory can render to commerce and manufactures. The grant made by the Government is treated by them as one in aid of science itself, although it is applied under the highest scientific

direction to facilitate the applications of science to manufacture. This distinction is an important one, which needs to be emphasized; when it is fully grasped the progress of the Laboratory, as an aid to national industry, will be much more rapid.

Publications.

During the past year 22 papers have been published in the Mathematical and Physical section, and 13 in the Biological section of the "Philosophical Transactions." The two sections together contain in all 1,420 pages of letterpress and 32 plates. Sixteen numbers of the "Proceedings" have been issued, containing 868 pages and 25 plates.

In all, 138 papers were received between the close of the previous Session in June, 1903, and the corresponding date in 1904. Of these, 38 were submitted for publication in the "Philosophical Transactions," and 99 for the "Proceedings"; and 27 and 92 have been ordered for publication in the two classes respectively.

Publication Grant.

Out of the Grant of £1,000 annually placed in the Society's hands by His Majesty's Government "to assist not merely their own publications, but also the adequate publication of scientific matter through other channels and in other ways," the sum of £450 has been voted this year to Societies and agencies other than the Royal Society. Of the total sum of £9,000 received by the Society in respect of this Grant since its initiation, the sum of £4,219 15s. has been so applied.

Library.

During the past year 4 new serial publications have been added to the 494 which the Society already received regularly by exchange or purchase. Besides these, 55 books have been added to the Library by presentation or purchase. Among the presents may be mentioned:—

Lord Kelvin, "Baltimore Lectures on Molecular Dynamics"; Sir G. Stokes, "Mathematical and Physical Papers," vol. 3; "Atlas de Photographie Solaire de l'Observatoire Physique de Paris," vol. 1; "Norwegian N. Polar Expedition, Scientific Results," vol. 4; Sir W. Garstin, "Report upon the Basin of the Upper Nile"; Laplace, "Œuvres Complètes," vol. 13, published by the Académie des Sciences, Paris.

Sectional Committees.

In accordance with a decision mentioned in the last Annual Report of the Council, a special meeting of the Society was convened in January last for the discussion of the question of the powers that might be delegated to Standing Committees, and especially to the Sectional Committees. An interesting discussion took place; but the opinions expressed in the discussion revealed no such general consensus of opinion as to justify the Council in taking any immediate steps to modify the existing procedure of the Society.

Scientific Education in Schools.

The President in his Address at the Anniversary Meeting in 1902 dwelt at some length upon the defects of the system of Secondary Education in this country, particularly in respect of instruction in scientific methods of study. The attention of the Council having been directed to the importance of this subject, and to the desirability of attempting to bring the combined influence of the Universities to bear in the matter, they adopted, after prolonged consideration, a statement, which they have forwarded, with a covering letter, to all the Universities in the United Kingdom. The texts of these documents are subjoined. Replies, in the main of a cordial and sympathetic character, have been received from many of the Universities individually; but the problem of united action is doubtless a difficult one.

“ January, 21, 1904.

“ The Address delivered by the President of the Royal Society (Sir William Huggins) at the anniversary meeting on December 1, 1902, was devoted in part to a consideration of the defects of the system of secondary education in this country, including the prevalent absence of initiation into scientific method and habits of observation. The public interest excited by this Address has led to urgent application to the Royal Society, from persons whose opinions carry great weight, that this subject should not be allowed to drop; and the Council have, moreover, been informed that some of those occupying the most responsible positions with regard to the Public Schools would welcome advice and assistance in this matter from outside. The President and Council of the Royal Society, after careful consideration, came to the conclusion that they would not be justified in entirely declining the task thus influentially pressed upon them; and they accordingly appointed a Special Committee to prepare the subject for detailed consideration, and especially to suggest a plan for inviting the active participation of the Universities in the problem of the improvement of education in Secondary Schools. At the same time they adopted the following resolution:—

“ That the Universities be respectfully urged to consider the desirability of taking such steps in respect of their regulations as will, so far as possible, ensure that a knowledge of Science is recognised in schools and elsewhere as an essential part of general education.’

"The recommendations of this Committee have received further prolonged consideration. As the result, we have been directed to submit the resolution quoted above to the Universities of the United Kingdom, and to express the strong conviction of the President and Council of the Royal Society that it is in the power of the Universities, by taking up this subject resolutely, and so far as possible in concert, to confer most substantial benefit on the nation. The Royal Society fully recognises that it is to the Universities, as bodies expert in educational affairs, that the initiation of a plan of procedure would naturally belong, and they do not formally offer any detailed recommendations. We are, however, instructed to transmit for your information the statement enclosed, which is representative of a large body of scientific opinion, and may be of use in your deliberations."

*"Statement regarding Scientific Education in Schools, drawn up by a
Committee of the Royal Society.*

"Notwithstanding efforts extending over more than half a century, it still remains substantially true that the Public Schools have devised for themselves no adequate way of assimilating into their system of education the principles and methods of science. The experience of "modern sides" and other arrangements shows that it can hardly be expected that, without external stimulus and assistance, a type of public school education can be evolved which, whilst retaining literary culture, will at the same time broaden it by scientific interests. On the other hand, it is admitted that many students trained in the recent foundations for technical scientific instruction have remained ignorant of essential subjects of general education.

"The bodies which can do most to promote and encourage improvement in these matters, are the Universities, through the influence which they are in a position to exert on secondary education. This improvement will not, however, be brought about by making the avenues to degrees in scientific or other subjects easier than at present. Rather, the test of preliminary general education is too slight already, with the result that a wide gap is often established between scientific students careless of literary form, and other students ignorant of scientific method.

"It may be suggested that the Universities might expand and improve their general tests, so as to make them correspond with the education, both literary and scientific, which a student, matriculating at the age of nineteen years, should be expected to have acquired; and that they should themselves make provision, in cases where this test is not satisfied, for ensuring the completion of the general preliminary education of their students, before close specialization is allowed.

"In particular, it appears desirable that some means should be found for giving a wider range of attainment to students preparing for the profession of teaching. The result of the existing system is usually to place the supreme control of a public school in the hands of a headmaster who has little knowledge of the scientific side of education; while the instructors in many colleges have to deal with students who have had no training in the exact and orderly expression of their ideas.

"Our main intention is not, however, to offer detailed suggestions, but to express our belief that this question of the adaptation of secondary education to modern conditions involves problems that should not be left to individual effort, or even to public legislative control; that it is rather a subject in which the Universities of the United Kingdom might be expected to lead the way and exert their powerful influence for the benefit of the nation."

Form of Publications.

Since the issue of the last Report the Committee appointed to consider and report upon the proposed alterations of form in the Society's publications has made recommendations to the following effect, which have been adopted by the Council :—(1) that the size of page of the "Proceedings" be enlarged ; (2) that the "Proceedings" be printed in the same style of type as at present, but with slightly wider spacing, and that the present title be retained ; (3) that papers published by the Society be published in the enlarged "Proceedings" so far as considerations of length and convenience permit ; (4) that the present form of the "Philosophical Transactions" be retained with modifications in the typography, and in particular that mathematical formulæ and tabular matter be printed in a more compact form.

Questions as to the division of the "Proceedings" into two series, Physical and Biological, and as to the extension to other learned societies of privileges similar to those at present enjoyed by the Royal Astronomical Society in obtaining off-prints of Royal Society papers, were also reported upon by the Committee. The Council have recently decided to publish the new "Proceedings" in two series, which may be purchased separately, corresponding in classification to the "A" and "B" series of the "Philosophical Transactions"; both series will be issued in parts simultaneously to all who are entitled to receive the "Proceedings" in their existing form.

THE PRESIDENT'S ANNIVERSARY ADDRESS.

Since the last Anniversary the Society has lost by death fourteen Fellows.

The deceased Fellows are:—

Sir Frederick Bramwell, born 1818, died Nov. 30, 1903.

Robert Etheridge, born Dec. 3, 1819, died Dec. 18, 1903.

George Salmon, born Sept. 25, 1819, died Jan. 22, 1904.

Lieut.-General C. A. McMahon, born Mar. 23, 1830, died Feb. 21, 1904.

Sir C. Le Neve Foster, born Mar. 23, 1841, died April 19, 1904.

George Johnston Allman, born 1824, died May 8, 1904.

Alexander William Williamson, died May 6, 1904.

Robert McLachlan, died May 23, 1904.

Isaac Roberts, born 1829, died July 17, 1904.

Sir John Simon, born Oct. 10, 1816, died July 23, 1904.

Joseph David Everett, born 1831, died Aug. 9, 1904.

Sir William Vernon Harcourt, born Oct. 14, 1827, died Oct. 1, 1904.

Frank McClean, born 1837, died Nov. 8, 1904.

Earl of Northbrook, born 1826, died Nov. 15, 1904.

Memorial Notices of the Fellows who have been taken from us by death during the past year will appear in due course in the Obituary Notices. Of some of them only, on this occasion, will time permit me to give expression, on your behalf, to a few words of appreciation of their work, and of deep sorrow at their loss.

In your name I place a wreath, emblem of our respect and of our deep sorrow, to the memory of our late Fellow and Copley-Medallist, the revered Provost of Trinity College, Dublin, who passed away at the ripe age of eighty-four years. George Salmon was as remarkable in the influence of his powerful personality, as in his works, by which he extended and adorned two domains of thought, as diverse as mathematics and theology. It is given to few men to achieve a European reputation as an investigator of the first rank in two distinct provinces of knowledge.

Born and educated in the City of Cork, he matriculated at Trinity College, Dublin, at the early age of fourteen. After a brilliant undergraduate course, he took his degree in 1838, and was elected a Fellow in 1841. Devoting himself to the study of pure mathematics, he produced a series of books, now accounted as classics in every university of the world, which were of very great service in promoting the advancement of that science. Their value was shown by the number of their editions, by their translation into several languages, and by the honours they procured for their author. In his "Lessons Introductory to the Study of the Modern Higher Algebra," which grew in subsequent editions until it became a treatise, he made accessible to the student the recent researches of the previous twenty years into the theory of transformations of binary forms.

Following the traditions of the Dublin School of Mathematics, he gave wide scope in all his books to geometrical method, often relieving the monotony of pages of analysis by the introduction of a brilliant geometrical proof.

In 1866, on the preferment of Dr. Butcher, Salmon was appointed Regius Professor of Divinity, from which time he ceased to work at mathematics, except in an occasional way at the Theory of Numbers. This is not the place for a consideration of his contributions to theological literature, nor of his great influence in the Church in Ireland at a time of exceptional difficulty. One important aspect of his theological labours is expressed by the title which was given to him of "*malleus Germanorum.*"

In the year 1888 he was appointed by the Lord Lieutenant to the post of Provost of Trinity College. His large sympathy with all sorts and conditions of men, his unaffected dignity, his genial humour, and his kind heart, gave to his masterful tenure of the office of Provost an influence probably unparalleled in the history of Trinity College.

Not Trinity College alone, but all Dublin was proud of him. Men of all classes and creeds praised him. His private tastes were simple; his chief relaxations, chess playing, music, and novel reading. In the words of the late Bishop of Oxford:—"The Provost is an extraordinary man. The first day I met him I was most struck by his gracious courtesy, the second day by his learning, the third day by his humour, and every day by his humility."

The Fates are inexorable; there may be long delay, but always at last the thread is cut. In midsummer our oldest Fellow, in point of election as well as of age, passed from us:—Sir John Simon, the pioneer of modern sanitary science. What Lister did for surgery, and Pasteur for bacteriology, Simon may be said to have accomplished for sanitation. Very early he perceived clearly and developed the true nature and mode of dealing with contagious emanations proceeding

from the sick, establishing a doctrine and practice which afterwards received their direct proof and further development in the growth of the new science of bacteriology. Deeply grateful to his memory, we mourn one who by his life-work conferred incalculable benefit upon the whole civilized world.

Simon commenced the study of medicine in 1833, and attended both St. Thomas's Hospital and the recently established King's College. It was in 1848 that his attention was definitely directed to that branch of the profession with which his name will always remain famous, and which indeed he may almost be said to have founded, through his election to the newly-constituted post of Medical Officer of Health to the City of London. Seven years later a Central Board of Health was created, on which Simon represented medicine. When the functions of the Board were transferred to the Privy Council, he became adviser to the Government on all sanitary and medical matters. It is not possible on this occasion to indicate, even broadly, his strenuous work through a long life for the public good. His writings consist mainly of his numerous official reports, together with a volume published in 1857, entitled "Papers on the History and Practice of Vaccination," followed in the next year by a "Report on the Sanitary State of the People of England," which brought out for the first time the wide variations which exist in the local incidence of diseases. His great work on "English Sanitary Institutions" appeared in 1890. In 1878 he was elected President of the Royal College of Surgeons; he was the recipient of numerous honours from scientific bodies at home and abroad. At the Jubilee in 1887 he received from Queen Victoria the distinction of K.C.B. These public recognitions were the outward signs of the universal respect and honour accorded him by all men. His memory will ever remain green in the history of sanitary science.

In May passed away, full of years and full of honours, a Fellow to whose personal services the Society is largely indebted—Professor Williamson. Elected into the Society in 1855, after serving twice upon the Council, he became Foreign Secretary in 1873, which office he held for sixteen years, until 1889. Half a century ago, Williamson took a prominent part in the development of chemical thought, and exercised a powerful influence on chemical teaching in this country. He began the study of chemistry at Heidelberg, but soon passed to Liebig's laboratory at Giessen, where he took his degree, and while there published papers on the decomposition of Oxides and Salts by Chlorine, and on "The Blue Compounds of Cyanogen and Iron." He then went to Paris, where he came under the teaching of Comte. In 1849 he left Paris to occupy the chair of practical chemistry in University College, from which he continued to teach for thirty-eight

years. A little later he published the classical research, elucidating the process of the formation of ether, with which his name will always remain associated. This paper, a model of concise reasoning founded upon happily devised experiment, produced a profound influence on contemporary thought, and received the assent of the whole chemical world. In this paper he gave his acceptance of the doctrine of types, which was prominent in his subsequent teaching. Williamson was a pioneer of chemical thought in quite another direction by the introduction of the conception of dynamics into chemical processes. He advanced the view, which is fundamental in the modern hypothesis of ionic dissociation, that in substances which appear at rest, the atoms of the molecules of the compound are in motion exchanging from one molecule to another in an unending course of ionic migrations.

Williamson occupied the chair of the British Association in 1873, and was twice President of the Chemical Society. Honorary degrees were conferred upon him by the Universities of Dublin, Edinburgh, and Durham, and he received the honorary membership of many scientific Societies. Seventeen years ago he retired from professional life to Hindhead.

Alas! this room will know no more a frequent and welcome attendant at our meetings who often took part in our discussions. A man whose great natural vitality and intellectual activity were so remarkable and unimpaired, that his sudden death came as a great shock to his many friends. Professor Everett was born and educated at Ipswich, and after graduating with honours at Glasgow, he became Professor of Mathematics at King's College, Nova Scotia. Later, in 1867, he was appointed Professor of Natural Philosophy at Queen's College, Belfast, a chair which he occupied with distinction for thirty years. Since his retirement, about seven years ago, he has resided in London, taking an active part in the proceedings of scientific societies, especially of the Physical Society, of which he was a Vice-President. Professor Everett rendered important service to physical science, by his admirable translation of Deschanel's "Treatise of Natural Philosophy," which he brought up to date from time to time by the necessary additions and alterations, and by his "Illustrations of the C.G.S. System," which was translated into several languages, and proved of material service in the establishment of a physical system of units. He did important work as the secretary of the Committee of the British Association which effected the selection and naming of these dynamical and electrical units, and also of the Committee which has collected our main knowledge of underground temperatures. He was the inventor of a system of shorthand, which provides greater facilities for vowel insertion than other systems. He was enthusiastically devoted to

cycling. A man of great kindness and geniality, he is regretted by a large circle of friends, and will always be remembered by his numerous pupils with much gratitude and affection.

Death has deprived us of a Fellow whose genial humour, clear judgment, and ready wit endeared him to many friends—Sir Frederick Bramwell. In Bramwell the love of things mechanical was inborn. At the time of his youth, technical education was all but unknown, and very few engineering students could take advantage of such a meagre scientific education as was then available. He was a striking example of what he himself said of some distinguished engineers:—"That they literally became such because they could not help it." With Bramwell the taste for engineering was innate and supreme. Study was not congenial to him; his extensive and varied knowledge was mainly the outcome of personal observation and experience.

After some years' varied experience in different engineering workshops he commenced practice on his own account in 1853. He soon made his mark; but, as he especially shone in debate, where his judgment was rarely at fault, and he brought shrewd common sense to bear with happy flashes of wit and apt practical illustrations, he was irresistibly drawn from the constructive to the legal side of his profession, in which he received no little advantage from his powerful voice and his commanding presence. In giving evidence, Bramwell was remarkably able, and as an arbitrator his judgments were clear, judicial, and marked by legal acumen. In one or other capacity his services were in much demand during the last thirty or forty years. He was chosen President of the Institution of Mechanical Engineers in 1874, and, ten years later, President of the Institution of Civil Engineers. He was President of the British Association at its meeting at Bath in 1888. He became one of our Fellows in 1873, and served on the Council in 1877-1878. On the retirement of Sir William Bowman, he was elected Honorary Secretary of the Royal Institution. Honorary degrees were conferred upon him by the Universities of Oxford, Cambridge, Durham, and Montreal. In 1889 Queen Victoria bestowed upon him the honour of a baronetcy.

George Johnston Allman was born in Dublin in 1824. He entered Trinity College at an early age, and at the honour degree examination, in 1843, he obtained Senior Moderatorship and a gold medal in mathematics. A few years later he was elected to the Professorship of Mathematics in Queen's College, Galway, a post which he held for nearly forty years until his retirement in accordance with the age limit. His most important works were a paper, "On some Properties of the Paraboloids," and a series of papers on the history of Greek mathematics, which formed the basis of his celebrated book "Greek

Geometry from Thales to Euclid." He was elected a Fellow of the Society in 1884.

The name of Dr. Isaac Roberts will always be associated with the photography of the heavenly bodies. He early showed his love for physical science. His first scientific paper was on the wells and water of Liverpool, where he resided; and in the following year, 1870, he was elected a Fellow of the Geological Society. Other papers followed on underground waters, especially with respect to their oscillations in porous strata. He soon directed his principal attention to Astronomy, and erected an observatory near Liverpool. At first he contemplated photographing the whole northern heavens, but when an astrographic chart and catalogue for both hemispheres were undertaken by an International Co-operation of Observatories, with great prescience he decided to devote himself to photographing star-clusters and nebulae. Finding the neighbourhood of Liverpool unfavourable for such work, after a long personal examination of various sites, he erected an observatory on Crowborough Hill, where, during thirteen years he secured the splendid series of astronomical photographs, bringing to light a wealth of unsuspected detail, which have largely aided in the recent extension of our knowledge of nebulae and star-clusters. Two volumes containing reproductions of these photographs were published by Dr. Roberts at his own expense, and widely distributed among astronomers. He was elected to our Fellowship in 1890. In 1892 Trinity College, Dublin, conferred upon him the honorary degree of D.Sc.; three years later he received the gold medal of the Royal Astronomical Society.

To his many friends the sudden death of Sir Clement le Neve Foster came as a very painful shock. He was educated in France, and obtained the degree of Bachelor of Science of the University of France at the early age of sixteen. He then entered the Royal School of Mines, where in two years he achieved the remarkable distinction of securing the Associateship in the Mining, Metallurgical and Geological divisions, as well as the Duke of Cornwall's scholarship, and the Forbes Medal. In 1872 he was appointed H.M. Inspector of Mines. He succeeded, in 1890, Sir Warrington Smyth as Professor of Mining at the Royal College of Science, and the Royal School of Mines. He became a Fellow of our Society in 1892. On the King's birthday, last year, he received the honour of Knighthood. During his twenty-nine years' Government Inspectorship, Sir Clement did much to ameliorate the lot of the miner, and to establish metal mining on a scientific basis.

Quite recently the Society has suffered a further loss in the unexpected death of Dr. McClean, who, by his wisely-considered benefactions, as well as by his personal work, has contributed not a little to the increase of natural knowledge. Having retired thirty-four

years ago from professional work as an engineer, he built an astronomical observatory at his house at Tunbridge Wells, and devoted himself to photo-spectroscopic work on the sun and stars. His photographic spectra of all stars above the $3\frac{1}{2}$ magnitude appeared in our *Transactions*, in which he showed the presence of oxygen in connection with helium in certain stars. His benefactions to Science are of two kinds. In 1890 he founded the Isaac Newton Studentships at Cambridge for the promotion of the study of Astronomy and Astronomical Physics; while, on the practical side, ten years later, he made a most generous gift of valuable instruments to the Royal Observatory at the Cape of Good Hope. He has crossed the great bar, to the deep sorrow of his many friends, and to the great regret of all men of science.

During the last few years a very large amount, increasing each year, of work outside the reading, discussion, and printing of papers, of a more or less public character, has been thrown upon the Royal Society—so large indeed as at present to tax the Society's powers to the utmost. A not inconsiderable part of this work has come from the initiation by the Society itself of new undertakings, but mainly it has consisted of assistance freely given, at their request, to different Departments of the Government on questions which require expert scientific knowledge, and which involves no small amount of labour on the part of the Officers and Staff, and much free sacrifice of time and energy from Fellows, in most cases living at a distance.

There is little doubt that this largely-increased amount of public work has arisen, in part naturally from the greater scientific activity of the present day, but also, and to a greater extent, from the fuller recognition by the Government and the public, of the need for scientific advice and direction in connection with many matters of national concern.

It may not be inopportune, therefore, for me to say a few words on the advisory relation in which the Society has come to stand to the Government, and to review very briefly the great work which the Society has done, and is doing, for the Nation.

Among Academies and Learned Societies the position of the Royal Society is, in some respects, an exceptional one. In the British dominions it holds a unique position, not only as the earliest chartered scientific Society, but in its own right, on account of the number of eminent men included in its Fellowship, and the close connection in which it stands, though remaining a private institution, with the Government. The Royal Society is a private learned body, consisting of a voluntary and independent association of students of science united for the promotion of Natural Knowledge at their own cost. It asks

for no endowment from the State, for it could not tolerate the control from without which follows the acceptance of public money, nor permit of that interference with its internal affairs which, as is seen in some foreign Academies, is associated with State endowment. In one particular case, in which it can receive aid without any loss of independence, the Society gratefully acknowledges its indebtedness to the State. About 1780 the Society received a communication from the Government offering to provide apartments for the Society at Somerset House; these were exchanged, in 1857, for rooms in old Burlington House; after its rebuilding, in 1873, the Society moved into the apartments which it now occupies. It should not be forgotten that nearly a century before the opening of the British Museum in 1759, the Royal Society's Museum, or Repository as it was called, enjoyed the prestige of being regarded as the most important Museum in London, and must have been of great use to men of science, and have aided materially in promoting and disseminating the knowledge of natural history. The apartments offered to the Society at Somerset House were quite insufficient in capacity and in number to receive the Society's Museum, and in consequence, this collection, which had been carefully maintained not only from the scientific side, but also with reference to the commercial value and importance of the foreign objects received, especially of the valuable zoological specimens frequently sent by the Hudson's Bay Company from their territories, was presented by the Society to the Nation, a not unworthy acknowledgment, on the Society's part, of the Government's gift of apartments. This collection has not been kept separate, but is now hopelessly dispersed among the thousands of specimens which crowd the halls of our National Museum. Some specimens, however, in comparative anatomy, preserved in the Museum of the College of Surgeons, are duly entered in the catalogue as having belonged originally to the Royal Society's Museum.

Besides the grant of apartments in Somerset House, and subsequently in Burlington House, the Society has received no pecuniary support from Government, nor assistance of any kind, with one exception to be mentioned further on, beyond the grant by Charles II. shortly after its incorporation, of Chelsea College and the lands appertaining to it; a gift which proved much less valuable than appeared from the parchments. Claimants at once came forward for portions of the estate, and the property was in so unsettled a state as to title, and so much out of repair, that after much money had been spent on repairing the College and great exertions made in vain to procure a tenant, the President was authorised to sell the estate to the King for the sum of £1,300; the Council voting their thanks to him for "thus disposing of a property which was a source of continual

annoyance and trouble to them." To the extent of this sum the Society's funds were enriched by the royal gift.

The grants of £4,000 and £1,000 now received annually by the Royal Society from the Government are not applicable to its own needs, but is money placed in its hands in trust for grants in aid of the prosecution of scientific research, and of the publication of scientific papers; indeed, with the exception of part of the publication grant, are so far from being of the nature of a State bounty, that the careful administration of these grants brings no light burden upon the Society.

It may not be generally known that the Royal Society just missed becoming a richly-endowed Society. Charles II.'s interest in the young Society did not end with the grant of a Charter of Incorporation, for in 1662 he addressed a letter, written with his own hand, to the Duke of Ormonde, then Lord Lieutenant of Ireland, recommending the Royal Society for a "liberal contribution from the adventurers and officers of Ireland for the better encouragement of them in their designs." That is to say, in the new settlement in that country, on the Restoration, of the confiscated estates of such persons as by the King's declaration were disqualified. The Royal Society had but a poor chance, notwithstanding the King's letter, of coming in for a portion of these so-called "fractions," when so many high families were cheated of their rights, and the Duke's own estates, through his methods of adjudication, increased from £7,000 to £80,000 per annum. Sir William Petty, in a document preserved in the archives of the Society, estimates the value of the lands granted by the King to the Society, but not received by them, "as a great matter, but I know not what."

It is on record that the non-fulfilment of the King's generous intentions towards the Society did not damp the philosophic ardour of the Fellows; indeed, it is a question on which opinions may widely differ whether the rich endowment of the Society, almost from its very birth, would have increased its scientific success. We must not forget, in the case of institutions as well as of individuals, the powerful and healthy stimulus to the exertion needful for success which arises from the necessity of coping with and overcoming difficulties, whether of a monetary or other kind. In no small degree was due to the personal favour with which Charles II. regarded the Society, the exceptional position it early took up, and which it still holds to-day, of a private institution supported and controlled from within, which, at the same time, is acknowledged by the State as the authoritative national representative of Science in this country, and from time to time consulted as such.

The first royal act which distinctly gave this representative character

to the newly chartered Society appears to have been the King's declaring his pleasure on the 15th October, 1662, "that no patent should pass for any philosophical or mechanical invention until examined by the Society." This personal recognition by the King of the national position of the Society was followed and confirmed a few years later by a request from the department of the Admiralty for assistance from the Royal Society in raising some ships sunk off Woolwich. The Council replied that, though they would have great pleasure in affording all assistance in their power by advice, the want of funds rendered it impossible for them to provide the necessary machinery.

From that time down to the present the Royal Society, while remaining a purely private institution for the promotion of natural knowledge, has been regarded by the Government as the acknowledged national scientific body, whose advice is of the highest authority on all scientific questions, and the more to be trusted on account of the Society's financial independence; a body, which, through its intimate relations with the learned societies of the Colonies, has now become the centre of British science. The Society's historical position and the scientific eminence of its Fellows have made it naturally the body which the scientific authorities of foreign countries regard as representing the science of the Empire, and with which they are anxious to consult and to co-operate, from time to time, on scientific questions of international importance.

On their part, the Fellows of the Royal Society, remembering that the promotion of Natural Knowledge is the great object for which it was founded and still exists, and that all undertakings in the home and in the State, since they are concerned with Nature, can be wisely directed and carried on with the highest efficiency only as they are based upon a knowledge of Nature, have always recognised the fundamental importance of the Society's work to national as well as to individual success and prosperity, and their own responsibility as the depositories of such knowledge. They have always been willing, even at great personal cost, ungrudgingly to afford any assistance in their power to the Government on all questions referred to them which depend upon technical knowledge, or which require the employment of scientific methods. In particular the Society has naturally always been eager to help forward, and even to initiate, such national undertakings as voyages of observation or of discovery of any kind, or for the investigation of the incidence of disease, which have for their express object the increase of Natural Knowledge.

At the same time, as the Society is dependent upon the voluntary help of its Fellows, whose time is fully occupied with their own work, the Society may reasonably expect the Government not to ask for

assistance on any matters of mere administration that could be otherwise efficiently provided for. The hope may be expressed that in the near future, with increased official provision in connection with the recognition of Science, the relation of the Society to the Government may not extend beyond that of a purely advisory body, so that the heavy responsibilities now resting upon it, in respect of the carrying out of many public undertakings on which its advice has been asked, may no longer press unduly, as they certainly do at present, upon the time and energy of the Officers and Members of Committees. The Society regards this outside work, important as it is, as extraneous, and therefore as subordinate, and would not be justified in permitting such work to interfere with the strict prosecution of pure natural science as the primary purpose of the Society's existence, upon which, indeed, the Society's importance as an advisory body ultimately depends.

The array of national undertakings of which the Society has been wholly or in part in charge, or to which it has given advice or assistance from time to time, is so very great that any attempt to point out, even in broad outline, the more important of the directions in which the Society's influence has been actively employed for the public service, must necessarily be fragmentary and very incomplete. On this occasion it is not possible to do more than to give, in a few sentences, a rapid presentation of a few typical examples of the Society's public work.

It must be borne in mind that the bare statement in a few sentences of the public work accomplished by the Society fails altogether to bring before the imagination an adequate conception of the large amount of free labour ungrudgingly given by those Fellows who composed the several committees to which the work was entrusted.

Going back to the first century of the Society's existence, the work done for the National Observatory at Greenwich may be fairly taken as typical of the Society's outside activity at that time. It is not too much to say that the Observatory owes, in no small degree, its early efficiency and the high position it soon reached, to the advice and the energetic action on its behalf of the Royal Society. The Observatory, at the time it was placed, in 1710, by Queen Anne in the sole charge of the Society, was without instruments, except such as Flamsteed had himself supplied. Immediately on taking charge, the Society appointed a Committee which visited Greenwich, and, as a result, sent in an application to the Ordnance Office, but at the time unsuccessfully, for the new instruments which were absolutely essential for properly carrying on the work of an observatory. The little interest taken by the Government of that day in science is manifest from the answer received from the Ordnance Office "that they had

never been at any charge for instruments, but only for repairing the house and paying Mr. Flamsteed's salary." The Society persevered, and when, in 1720, Halley succeeded Flamsteed, was successful in persuading the Government to provide a few of the more necessary instruments. At a little later date the Society induced the Government to expend £1,000 on instruments, to be constructed by Graham and Bird. When George III. came to the throne he re-appointed the Society as sole visitors, and ordered the Astronomer Royal to obey the regulations drawn up by the Council, and commanded the Master General of Ordnance to furnish such instruments as the Council should think necessary for the Observatory. In the list of these instruments is mentioned a ten-foot telescope of Dollond's "new invention." Further, it was in answer to a petition from the Royal Society that the King gave orders for the printing of the Observations made at the Observatory. At a later date the Society called on the Government to advance funds to establish magnetical observatories at Greenwich, and in various parts of the British dominions, with the result that in a few years no fewer than forty magnetical establishments were in full activity.

In connection with the Observatory may be mentioned the considerable share which the Society took in bringing about the important alteration of the Calendar, known as the Change of Style, which took place in 1752. The Bill was drawn up by Peter Daval, the Secretary of the Society, aided and supported by Lord Macclesfield, who became President the following year. The change was approved and assisted by the actual President, Martin Folkes. The feeling of the people was so strongly against the change that the illness and death of Bradley, who as Astronomer Royal had assisted the Government with his advice, which took place not long afterwards, were popularly attributed to a judgment from Heaven.

Very brief must be the mention of some of the other works in the public service which were carried out at a no small cost of labour to the Fellows of the Society.

About 1750, the Lord Mayor of London, two of the Judges and an Alderman, having died in one year from jail-fever caught at the Old Bailey Sessions, the Society was called upon for advice and assistance. A committee was appointed to investigate the wretched state of ventilation in jails. A ventilator, invented by one of the committee, was erected in Newgate, reducing at once the number of deaths from eight a week to about two a month. Of the eleven workmen employed to put up the ventilator seven caught the fever and died.

At the request of the Government committees were appointed to consider the best form of protection of buildings, and, later on, of ships at sea, from lightning.

The Society took a very active part in the measurement of a degree of latitude, afterwards in the length of a pendulum vibrating seconds in the latitude of London, and in the comparison of the British Standards with the Linear Measure adopted in France. A committee was appointed to compare the Society's Standard yard with that of the Exchequer. Later in 1834, when the Standard yard was lost in the destruction by fire of the Houses of Parliament, a Commission (all the members of which were Fellows of the Royal Society) was appointed to consider the steps to be taken for the restoration of the Standards.

It was at the instance of the Council of the Society, who petitioned George III. for the necessary funds, that the King gave his consent to a geodetical survey in 1784, with the immediate object of establishing a trigonometrical connection between the Observatories of Greenwich and Paris. The work, under General Roy, for which the Copley Medal was awarded to him, served as a basis for the operations of a more extensive nature, embracing a survey of the British Islands, which were commenced in 1791.

Since its foundation the Society has taken an active part in many important expeditions for scientific and geographical exploration, and for magnetical and astronomical observations, in some cases taking the initiative by memorializing the Government for the necessary assistance by grants of money, the use of ships, or otherwise. Among these may be mentioned the expeditions sent out for the observation of the Transits of Venus in 1761, and in 1769.

The importance of Antarctic exploration, for which the recent National Expedition has recently been promoted jointly with the Royal Geographical Society, was fully understood by the Royal Society nearly a century and a half ago. In 1771, an expedition, having for its principal object the exploring of high Southern latitudes with the view of ascertaining the existence of a great Antarctic Continent, was strongly and successfully urged on the Government by the Society. The expedition under Captain Cook sailed the following year. On its return three years later, after having circumnavigated the globe, the Copley Medal was awarded to Captain Cook for the means he had taken to preserve the health of his crew.

In 1817, a letter was addressed by Sir Joseph Banks, on the part of the Council, to Lord Melville urging that an expedition of discovery should be sent out for determining the practicability of a North-West Passage. The Lords of the Admiralty gave orders for the fitting out of four vessels, and invited detailed instructions from the Royal Society for the guidance of the officers. The Council recommended Colonel, then Captain, Sabine to proceed with the North-West Expedition, and Mr. Fisher to accompany the Polar one. The expedition failed to procure geographical results of importance but it

was far from fruitless, for the magnetical observations brought back by Sabine were an addition of real value to physical science.

This expedition was followed by another two years later under Parry, which resulted in the discovery of the Strait called after Barrow, then Secretary to the Admiralty.

A later Polar Expedition, under Captains Parry and Ross in 1827, was promoted by the Royal Society, and brought home valuable magnetical observations, which were printed in the Society's Transactions.

At home, it was through the Society's influence that Dr. Maskelyne, the Astronomer Royal, was able to make observations in Scotland for the purpose of deducing the density of the earth. Dr. Hutton undertook the laborious task of working up the data, the whole expenses being borne by the Society.

These few examples, inadequate as they are, must suffice on this occasion to remind us of the many labours during two centuries and a half undertaken by the Society for the public good. I pass now at once to some of the many objects of public concern, which are at the present time either directly promoted, or assisted by the Society.

The establishment in this country of a National Physical Laboratory for the purpose of bringing scientific knowledge to bear practically upon the industries and commerce of the nation, was due in no small measure to the action of the Society, and has certainly thrown upon it much additional permanent responsibility. The necessity for such an Institution in this country, which was clearly shown by the marked influence of a similar Institution on the improvement of technical science and the manufacturing interests of Germany, had been already strongly advocated by individual Fellows; in particular, by Sir Oliver Lodge at Cardiff in 1891, and Sir Douglas Galton at Ipswich five years later; but the first practical step towards its realisation was taken by the Council in 1896, when they decided that the Royal Society should join the British Association and other kindred Societies in a Joint Committee, under the Chairmanship of the President of the Royal Society, to take such action as they find desirable.

In the following year, this Committee waited upon Lord Salisbury, who was then Prime Minister, and, as a result, a Treasury Committee was appointed by the Chancellor of the Exchequer, with Lord Rayleigh as Chairman, to consider the desirability of establishing a National Laboratory. That Committee, after hearing witnesses and visiting Germany, reported strongly and unanimously in favour of such a national Institution. In 1898, a communication was received from the Treasury expressing "the hope that the Royal Society will be willing to add to the already great services rendered by them to the Government and public of the United Kingdom, by consenting to undertake

the new responsibilities now sought to be imposed upon them" in connection with the new Institution. The Council accepted the important trust, under which the "ultimate control of the Institution is vested in the President and Council of the Royal Society, who in the exercise thereof may issue from time to time such directions as they may think fit to the General Board and Executive Committee." The income and all other property is vested in the Royal Society for the purposes of the Institution. The Laboratory, which was formally opened by H.R.H. the Prince of Wales in March, 1902, has already made remarkable progress under its energetic Director. During the present year the attention of the Prime Minister has been called to the very great importance to the national industries of an immediate grant for new buildings and a more adequate instrumental equipment, and of a larger annual endowment.

It is not too much to say that men of science of all countries are under no small obligation to the Royal Society for their Catalogue of Scientific Papers, which have appeared in all parts of the world since the beginning of the last century. This great work, to which immense labour has been given gratuitously and without stint by Fellows during the past forty years, will be carried down to the close of the century, and will consist of two parts, an Authors' Catalogue, and a Catalogue of Subjects. Encouraged by a donation from Mr. Andrew Carnegie, and the noble liberality of Dr. Ludwig Mond and other Fellows, the Council decided to proceed with the completion of the Catalogue, in the hope of further donations from Fellows and others as the work advances.

It was obvious that to continue permanently to prepare and publish catalogues of the rapidly increasing output of scientific literature would be wholly beyond the means of any one Society, and was an undertaking so vast as to require organized international co-operation for success. In 1893, a letter, signed by seventeen Fellows, was addressed to the President, asking that steps might be taken to provide for the continuation of the Society's Catalogue from the beginning of the century by adequate international co-operation. A Committee was appointed which reported in favour of an international conference on the subject. Three conferences were held successively in 1896, 1898, and 1900. It is scarcely possible to convey an adequate conception of the arduous and prolonged labours of these conferences, and of the numerous meetings of committees held in connection with them. The Society may well feel great satisfaction that a work of such magnitude, and of so great moment to all scientific workers, which was initiated by itself, was taken up with such remarkable accord by the scientific world. The organisation consists mainly of a Central Bureau in London under the Royal Society, in connection with Regional Bureaus, established in thirty countries for collecting material in the form of

catalogue slips, and transmitting them to the Central Bureau. The Royal Society has taken upon itself practically the financial responsibility of the undertaking, making contracts in its own name with a printer and a publisher, the latter undertaking the technical duties as agent for the Society, which is its own publisher. The first year's issue of the catalogue has appeared, dealing in twenty-one volumes with the seventeen sciences decided upon by the conference.

The International Association of Academies, the realization for the first time of the great scientific idea of a Universal Academy, open without restriction of language or of climate to every nation under heaven, owes its establishment to the initiative of the Royal Society. In 1897, the Royal Society was invited to send representatives to a Conference of a Union of German Academies and Societies which met from time to time. The Society sent delegates, but declared that the Society's permanent adhesion to any such association must be conditional on its being made truly international in character. The principle of an international association of learned Societies suggested by the Royal Society, was accepted, and a conference was held at Wiesbaden in 1899 for the purpose of taking steps for the formation of such an association. Statutes were drawn up and arrangements made for the holding of the first General Assembly in Paris in 1901.

The primary objects of the Association are the initiation and promotion of scientific undertakings of general interest and of universal concern to mankind, especially of such matters as are outside the power of a single Academy and require for their promotion the assistance of the Governments represented by the Association. Indirectly by its triennial General Assemblies in different countries, it should become an instrument of no mean power for the promotion of the brotherhood of mankind and for hastening the day

"When the war drums throb no longer and the battle flags are furl'd,
In the Parliament of man, the Federation of the world."

The Association, as now constituted, consists of twenty Academies and learned Societies of Europe and America. The second General Assembly of the Association was held this year in London under the auspices of the Royal Society, which, as directing Academy, had had general charge of the conduct of its business during the last three years. The Section of Letters met under the direction of the newly-founded British Academy.

The Society has accepted heavy responsibilities at the instance of the Government in respect of the control of scientific observations and research in our vast Indian Empire. In 1899, the India Office inquired whether the Royal Society would be willing to meet the wishes of the Indian Government by exercising a general control over the

scientific researches which it might be thought desirable to institute in that country. A Standing Committee was appointed in consequence by the Council for the purpose of giving advice on matters connected with scientific enquiry, probably mainly biological, in India, which should be supplementary to the Standing Observatories Committee which was already established at the request of the Government as an advisory body on astronomical, solar, magnetic, and meteorological observations in that part of the Empire.

An investigation, onerous indeed, but of the highest scientific interest and of very great practical importance, has been carried on by a series of Committees successively appointed at the request of the Government for the consideration of some of the strangely mysterious and deadly diseases of tropical countries. In 1896 a Committee was appointed at the request of the Colonial Secretary to investigate the subject of the Tsetse Fly disease in South Africa. Two years later Mr. Chamberlain, Secretary of State for the Colonies, requested the Society to appoint a Committee to make a thorough investigation into the origin, the transmission, and the possible preventives and remedies of tropical diseases, and especially of the malarial and "Blackwater" fevers prevalent in Africa, promising assistance, both on the part of the Colonial Office and of the Colonies concerned. A Committee was appointed, and, under its auspices, skilled investigators were sent out to Africa and to India. In the case of the third Committee the Society itself took the initiative. An outbreak in Uganda of the disease, appalling in its inexorable deadliness, known as "Sleeping Sickness" having been brought to the knowledge of the Society, a deputation waited upon Lord Lansdowne at the Foreign Office, asking him to consider favourably the despatch of a small Commission to Uganda to investigate the disease. He gave his approval, and a Commission of three experts, appointed on the recommendation of the Committee, was sent out to Uganda, £600 being voted out of the Government Grant towards the expenses of the Commission.

The investigations in Tropical Diseases, promoted and directed by these Committees, have largely increased our knowledge of the true nature of these diseases, and, what is of the highest practical importance, they have shown that their propagation depends upon conditions which it is in the power of man so far to modify, or guard against, as to afford a reasonable expectation that it may be possible for Europeans to live and carry on their work in parts of the earth where hitherto the sacrifice of health, and even of life, has been fearfully great. A general summary of the work already done on Malaria, especially in regard to its prevention, and also on the nature of "Blackwater" fever, has been published in a Parliamentary paper, which records

Mr. Chamberlain's acknowledgment to the Royal Society for its co-operation in the work undertaken by the Colonial Office. Our Reports on Sleeping Sickness up to this time form four parts of a separate publication giving evidence in support of the view that this deadly disease is caused by the entrance into the blood, and thence into the cerebro-spinal fluid, of a species of trypanosoma, and that these organisms are transmitted from the sick to the healthy by a kind of tsetse fly, and by it alone; Sleeping Sickness is, in short, a human tsetse fly disease.

In 1897, the Council was requested to assist the Board of Trade in drawing up Schedules for the establishment of the relations between the Metric and the Imperial Units of Weights and Measures. A Committee was appointed, which, after devoting much time and attention to the matter, drew up Schedules which were accepted by the Board of Trade and incorporated in the Orders of Council.

A Coral Reef Committee has been in active existence for some years, and has directed the attempts to pierce, by boring, the atoll of Funafuti, towards the expenses of which grants have been made by the Council. The results of the work have appeared in a large volume, giving a description of the whole core from the points of view of the naturalist and the chemist; and a list, with critical remarks, of the species of animals and plants collected.

Soon after the reports were received of the appalling volcanic eruptions and the loss of life which took place in the West Indies in 1902, the Council received a letter from Mr. Chamberlain to ask if the Society would be willing to undertake an investigation of the phenomena connected with the eruptions. The Council, considering that such an investigation fell well within the scope of the objects of the Society, organized a small Commission of two experts, who left England for the scene of the eruption eleven days only after the receipt of Mr. Chamberlain's letter; the expenses being met by a grant of £300 from the Government Grant Committee. Six weeks were spent in the Islands, including Martinique, by the Commission, which was successful in securing results of great scientific interest. A preliminary report was published at the time, and a full report has since appeared in the "Transactions."

Time forbids me to do more than mention the successive expeditions sent out by the Society, conjointly with the Royal Astronomical Society, for the observation of total solar eclipses; and the onerous work thrown upon the Society for several years in connection with the National Antarctic Expedition, undertaken jointly with the Royal Geographical Society, which has this year returned home crowned with success as regards the latter; but the Society's labours are not at an end, for the prolonged and responsible task of the discussion and publication of the scientific results of the Expedition is still before them.

In addition to the numerous undertakings, of which some examples have been given, in which the influence and work of the Society have been exercised for national or public objects, there are a number of other ways in which the Society makes its influence continually felt and of which the responsibilities are always with it. The Society is represented by the President, as an *ex-officio* elector, in the election of eight scientific Professorships at the Oxford University, and one Professorship at Cambridge. The President is also *ex-officio* a trustee of the British Museum, and of the Hunterian Museum, and a Governor of the City and Guilds of London Institute. The Society has a voice, through a representative Fellow chosen by the Council, on the Governing bodies of the Imperial Institute, the Lister Institute of Preventive Medicine, Sir John Soane's Museum, Eton, Rugby, Harrow, Winchester, and four other public schools, and the Advisory Board for Military Education. The Council of the Society are electors of four members of Lawes' Agricultural Trust, and are nominators of the members of the Meteorological Council. The Society is represented by the President and six of the Visitors on the Board of the Greenwich Observatory. One of the four sets of copies of the Standard Weights and Measures is held in custody by the Society. There is also a committee for systematic work in Seismology.

To the Royal Society is entrusted the responsible task of administering the annual Government Grant of £4,000 for the purpose of scientific research, and a grant of £1,000 in aid of the publication of scientific papers.

In addition to these permanent responsibilities, which are always with the Society, its advice and aid are sought from time to time both by the Government and by Scientific Institutions at home and abroad, in favour of independent objects of a more or less temporary character, of which, as examples, may be taken the recent action of the Society for the purpose of obtaining Government aid for the continuation through Egypt of the African Arc of Meridian, and for the intervention of the Government to assist in securing the fulfilment of the part undertaken by Great Britain in the International Astrographic Catalogue and Chart.

Upon the present Fellows falls the glorious inheritance of unbounded free labour ungrudgingly given during two centuries and a half for the public service, as well as of the strenuous prosecution at the same time of the primary object of the Society, as set forth in the words of the Charters: "the promotion of Natural Knowledge." The successive generations of Fellows have unsparingly contributed of their time to the introduction and promotion, whenever the opportunity was afforded them, of scientific knowledge and methods into the

management of public concerns by Departments of the Government. The financial independence of the Royal Society, neither receiving, nor wishing to accept State aid for its own private purposes, has enabled the Society to give advice and assistance which, both with the Government and with Parliament, have the weight and finality of a wholly disinterested opinion. I may quote here the words of a recent letter from H.M. Treasury :—"Their Lordships have deemed themselves in the past very fortunate in being able to rely, in dealing with scientific questions, upon the aid of the Royal Society, which commands not only the confidence of the scientific world, but also of Parliament."

In the past the Royal Society has been not infrequently greatly hampered in giving its advice, by the knowledge that the funds absolutely needed for the carrying out of the matters in question in accordance with our present scientific knowledge would not be forthcoming. Though I am now speaking on my own responsibility, I am sure that the Society is with me, if I say that the expenditure by the Government on scientific research and scientific institutions, on which its commercial and industrial prosperity so largely depend, is wholly inadequate in view of the present state of international competition. I throw no blame on the individual members of the present or former Governments ; they are necessarily the representatives of public opinion, and cannot go beyond it. The cause is deeper, it lies in the absence in the leaders of public opinion, and indeed throughout the more influential classes of society, of a sufficiently intelligent appreciation of the supreme importance of scientific knowledge and scientific methods in all industrial enterprises, and indeed in all national undertakings. The evidence of this grave state of the public mind is strikingly shown by the very small response that follows any appeal that is made for scientific objects in this country, in contrast with the large donations and liberal endowments from private benefaction for scientific purposes and scientific institutions which are always at once forthcoming in the United States. In my opinion, the scientific deadness of the nation is mainly due to the too exclusively mediæval and classical methods of our higher public schools, and can only be slowly removed by making in future the teaching of science, not from text-books for passing an examination, but, as far as may be possible, from the study of the phenomena of Nature by direct observation and experiment, an integral and essential part of all education in this country.

I proceed to the award of the Medals.

COPLEY MEDAL.

The Copley Medal is awarded to Sir William Crookes, F.R.S., for his experimental researches in chemistry and physics, extending over

more than fifty years. Ever since his discovery of the element thallium in the early days of spectrum analysis, he has been in the front rank as regards the refined application of that weapon of research in chemical investigation. Later, the discrepancies which he found in an attempt to improve weighings, by conducting the operation in high vacua, were tracked out by him to a repulsion arising from radiation, which was ultimately ascribed by theory to the action of the residual gas. This phenomenon, illustrated by the radiometer, opened up a new and fascinating chapter in the dynamical theory of rarefied gases, which the genius of Maxwell, O. Reynolds, and others, has left still incomplete. The improvements in vacua embodied in the Crookes tube led him to a detailed and brilliant experimental analysis of the phenomena of the electric discharge across exhausted spaces; in this, backed by the authority of Stokes, he adduced long ago powerful cumulative evidence that the now familiar cathode rays, previously described by C. F. Varley, must consist of projected streams of some kind of material substance. His simple but minutely careful experiments on the progress of the ultimate falling off in the viscosity of rarefied gases, from the predicted constant value of Maxwell, at very high exhaustions, gave, in Stokes' hands, an exact account of the trend of this theoretically interesting phenomenon, which had already been approached in the investigations of Kundt and Warburg, using Maxwell's original method of vibrating discs.

These examples, not to mention recent work with radium, convey an idea of the acute observation, experimental skill, and persistent effort, which have enabled Sir William Crookes to enrich physical science in many departments.

RUMFORD MEDAL.

The Rumford Medal is awarded to Prof. Ernest Rutherford, F.R.S., on account of his researches on the properties of radio-active matter, in particular for his capital discovery of the active gaseous emanations emitted by such matter, and his detailed investigation of their transformations. The idea of radiations producing ionization, of the type originally discovered by Röntgen, and the idea of electrified particles, like the cathode rays of vacuum tubes, projected from radio-active bodies, had gradually become familiar through the work of a succession of recent investigators, when Rutherford's announcement of a very active substance, diffusing like a gas with a definite atomic mass, emitted by compounds of thorium, opened up yet another avenue of research with reference to these remarkable bodies. The precise interpretation of the new phenomena, so promptly perceived by

Rutherford, was quickly verified, for radium and other substances, by various observers, and is now universally accepted. The modes of degradation, and the enormous concomitant radio-activity, of these emanations, have been investigated mainly by Rutherford himself, with results embodied in his treatise on Radio-activity and his recent Bakerian Lecture on the same subject. It perhaps still remains a task for the future to verify or revise the details of these remarkable transformations of material substances, resulting apparently in the appearance of chemical elements not before present; but, however that may issue, by the detection and description of radio-active emanations and their transformations, Prof. Rutherford has added an unexpected domain of transcendent theoretical interest to physical science.

ROYAL MEDAL.

A Royal Medal is awarded to Prof. W. Burnside, F.R.S., on the ground of the number, originality, and importance of his contributions to Mathematical Science. The section of our "Catalogue of Scientific Papers" for the period 1883-1900, enumerates fifty-three papers by Prof. Burnside, the first dated 1885, and the "International Catalogue of Scientific Literature" thirteen more. His mathematical work has consisted largely of papers on the Theory of Groups, to which he has made most valuable additions. In 1897 he published a volume "On the Theory of Groups of Finite Order," which is a standard authority on that subject. Two recent papers on the same theory, published in 1903, may be specially mentioned. In one of these he succeeded in establishing by direct methods, distinguished by great conciseness of treatment, the important subsidiary theory of group-characteristics, which had been originally arrived at by very indirect and lengthy processes. In the other he proved quite shortly the important result that all groups of which the order is the product of powers of two primes are soluble.

Besides the treatise and papers relating to group theory, Prof. Burnside has published work on various branches of pure and applied mathematics. His work on automorphic functions dealt with an important and difficult special case which was not included in the theory of these functions as previously worked out. The paper on Green's function for a system of non-intersecting spheres was perhaps the first work by any writer in which the notions of automorphic functions and of the theory of groups were applied to a physical problem. He has also made important contributions to the Theory of Functions, Non-Euclidean Geometry, and the Theory of Waves on Liquids. His work is distinguished by great acuteness and power, as well as by unusual elegance and most admirable brevity.

ROYAL MEDAL.

The other Royal Medal is awarded to Col. David Bruce, F.R.S., who, since 1884, has been engaged in prosecuting to a successful issue researches into the causation of a number of important diseases affecting man and animals. When he went to Malta in 1884 the exact nature of the widely-prevalent "Malta," "Rock," or "Mediterranean" Fever was entirely unknown. After some years' work at the etiology of this disease, he discovered in 1887 the organism causing it, and succeeded in cultivating the *Micrococcus Melitensis* outside the body. This discovery has been confirmed by many other workers, and is one of great importance from all points of view, and perhaps more especially as, thanks to it, Malta fever can now be separated from other diseases, e.g., typhoid, remittent, and malarious fevers, with which it had hitherto been confounded.

During the next few years he was engaged in researches of value on Cholera, and on methods of immunisation against this disease. He also carried out some work on the Leucocytes in the Blood, published in the "Proceedings of the Royal Society," 1894.

In 1894 he was requested by the Governor of Natal to investigate the supposed distinct diseases of "Nagana" and the Tsetse Fly disease. In the short time of two months he made the most important discovery that these two diseases were one and the same, and dependent upon the presence of a protozoan organism in the blood known as a Trypanosoma. Some six months later Bruce was enabled to return to Zululand, and remained there two years, studying the disease and making the discovery that the Tsetse Fly acted as the carrier of the organism which caused it. He was thus the first to show that an insect might carry a protozoan parasite that was pathogenic. This observation was made in 1895.

Bruce not only determined the nature and course of "Nagana," but in addition he studied the disease in a large number of domestic animals, and also observed the malady in a latent form in the wild animals of South Africa. Subsequent observers have found but little to add to Bruce's work on this subject.

In 1900, Bruce was ordered to join a commission investigating the outbreak of Dysentery in the Army in South Africa, and a great part of the laboratory work performed by this commission was carried out by him.

In 1903, Col. Bruce went, at the request of the Royal Society, to Uganda, to investigate further the nature of Sleeping Sickness. It was very largely, if not entirely, owing to him that the work of the Royal Society's Commission was brought to a successful issue. At the time when he arrived, a Trypanosoma had been observed by Castellani in a small number of cases of this disease; thanks to Bruce's energy

and scientific insight, these observations were rapidly extended, and the most conclusive evidence obtained, that in all cases of the disease the *Trypanosoma* was present. He showed further that a certain Tsetse Fly, the *Glossina palpalis*, acted as the carrier of the *Trypanosoma*, and obtained evidence showing that the distribution of the disease and of the fly were strikingly similar.

Bruce has therefore been instrumental in discovering and establishing the exact nature and cause of three wide-spread diseases of man and of animals, and in two of these, Nagana and Malta Fever, he discovered the causal organism. In the third, Sleeping Sickness, he was not the first to see the organism, but he was quick to grasp and work out the discovery, and he made the interesting discovery of the carrier of the pathogenic organism, and thus discovered the mode of infection and of spread of the malady, matters of the highest importance as regards all measures directed to arrest the spreading of the disease.

All this research work has been done whilst serving in the Royal Army Medical Corps, and engaged in the routine work of the Service.

DAVY MEDAL.

The Davy Medal is awarded to Prof. W. H. Perkin, jun., F.R.S., for his masterly and fruitful researches in the domain of synthetic organic chemistry, on which he has been continuously engaged during the past twenty-five years.

Dr. Perkin's name is identified with the great advances which have been made during the past quarter of a century in our knowledge of the ring or cyclic compounds of carbon. Thus, in the year 1880, the cyclic carbon compounds known to chemists were chiefly restricted to the unsaturated groupings of six carbon atoms met with in benzene and its derivatives, whilst the number of compounds in which saturated carbon rings had been recognised was very limited, and it was indeed considered very doubtful whether compounds containing carbon rings with more or less than six atoms of carbon were capable of existence.

The starting point for Dr. Perkin's researches in this field of enquiry was his investigation of the behaviour of the di-halogen derivatives of various organic radicals with the sodium compounds of malonic, aceto-acetic, and benzoyl-acetic esters, which led to the synthesis of the cyclic polymethylene compounds up to those of hexamethylene, whilst heptamethylene derivatives were obtained by an adaptation of the well-known reduction of ketonic bodies leading to pinacones. The reactions thus introduced by Perkin are now classical, having proved themselves of the highest importance for

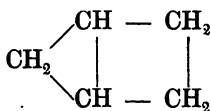
synthetical purposes and having been instrumental in stimulating the further investigation of the cyclic compounds of carbon.

Dr. Perkin also extended the same methods to the synthetical formation of carbon rings of the aromatic series, obtaining by means of ingeniously designed reactions derivatives of hydrindonaphthene and tetrahydronaphthalene.

But whilst the above achievements depend mainly on happily conceived and brilliantly executed extensions of the malonic and aceto-acetic ester syntheses, Perkin has, by a remarkable development of the Frankland and Duppa reaction for the synthesis of hydroxyacids, been successful in building up the important camphoric acid in such a manner as to place its constitution beyond doubt (1897).

Dr. Perkin has further devoted much attention to the important subject of the constitution of camphor, towards the elucidation of which he has contributed valuable experimental evidence embodied in a most important and elaborate paper, containing the results of many years' work in conjunction with numerous pupils, entitled "Sulphocamphylic acid and Isolaunonic acid, with remarks on the Constitution of Camphor and some of its derivatives" (1898). Bearing on the same subject are later communications on camphoric acid and isocamphoric acid.

About the year 1900, Perkin, in prosecuting his researches on the constitution of camphor compounds, succeeded in devising synthetical methods for the production of what he has termed "bridged rings," of which a simple example is furnished by the hydrocarbon dicyclopentane



The universal admiration of organic chemists has been called forth by these investigations; they reveal, indeed, a wonderful capacity for devising reactions which coerce carbon atoms to fall into the desired groupings.

Of other publications displaying not only extraordinary experimental skill but close reasoning and the power of interpreting results, mention may be made of Dr. Perkin's memorable researches on the constitution of dehydracetic acid, berberine, brasilin, and hæmatoxylin respectively.

During the present year (1904), Dr. Perkin has made perhaps the most remarkable addition to the long list of his achievements by successfully synthesising terpin, inactive terpeneol, and dipentene, substances which had previously engaged the attention of some of the greatest masters of organic chemistry.

In conclusion it may be stated that Prof. Perkin is not only the author of the above and numerous other important researches which are outside the scope of this brief summary, but that he has also created a school of research in organic chemistry, which stands in the very highest rank.

DARWIN MEDAL.

The Darwin Medal is awarded to Mr. William Bateson, F.R.S., for his researches on heredity and variation.

Mr. Bateson began his scientific career as a morphologist, and distinguished himself by researches on the structure and development of *Balanoglossus*, which have had a far-reaching influence on morphological science, and which established to the satisfaction of most anatomists the affinity of the Enteropneusta to the Chordate phylum. Dissatisfied, however, with the methods of morphological research as a means of advancing the study of evolution, he set himself resolutely to the task of finding a new method of attacking the species problem. Recognising the fact that variation was the basis upon which the theory of evolution rested, he turned his attention to the study of that subject, and entered upon a series of researches which culminated in the publication in 1894 of his well-known work, entitled "Materials for the Study of Variation, etc." This book broke new ground. Not only was it the first systematic work which had been published on variation, and, with the exception of Darwin's "Variation of Animals and Plants under Domestication," the only extensive work dealing with it; but it was the first serious attempt to establish the importance of the principle of discontinuity in variation in its fundamental bearing upon the problem of evolution, a principle which he constantly and successfully urged when the weight of authority was against it. In this work he collected and systematised a great number of examples of discontinuous variation, and by his broad and masterly handling of them he paved the way for those remarkable advances in the study of heredity which have taken place in the last few years, and to which he has himself so largely contributed. He was the first in this country to recognise the importance of the work of Mendel, which, published in 1864, and for a long time completely overlooked by naturalists, contained a clue to the labyrinth of facts which had resulted from the labours of his predecessors. He has brought these results prominently forward in England in his important reports to the Evolution Committee of the Royal Society, and in papers before the Royal and other Societies, and also before horticulturists and breeders of animals. He has gathered about him a distinguished body of workers, and has devoted himself with great energy and with all his available resources to following out lines of work similar to those of Mendel. The result has been the sup-

porting of Mendel's conclusions and the bringing to light of a much wider range of facts in general harmony with them. It is not too much to say that Mr. Bateson has developed a school of research to which many biologists are now looking as the source from which the next great advance in our knowledge of organic evolution will come.

SYLVESTER MEDAL.

The Sylvester Medal is awarded to Georg Cantor, Professor in the University of Halle, on account of his researches in Pure Mathematics. His work shows originality of the highest order, and is of the most far-reaching importance. He has not only created a new field of mathematical investigation, but his ideas, in their application to analysis, and in some measure to geometry, furnish a weapon of the utmost power and precision for dealing with the foundations of mathematics, and for formulating the necessary limitations to which many results of mathematics are subject.

In 1870 he succeeded in solving a question which was then attracting much attention—the question of the uniqueness of the representation of a function by Fourier's series. The extension of the result to cases in which the convergence of the series fails, at an infinite number of suitably distributed points, led him to construct a theory of irrational numbers, which has since become classical. From the same starting point he developed, in a series of masterly memoirs, an entirely new branch of mathematics—the Theory of Sets of Points.

Having established the fundamental distinction between those aggregates which can be counted and those which cannot, Cantor showed that the aggregates of all rational numbers and of all algebraic numbers belong to the former class, and that the arithmetic continuum belongs to the latter class, and further, that the continuum of any number of dimensions can be represented point for point by the linear continuum. Proceeding with these researches he introduced and developed his theory of "transfinite" ordinal and cardinal numbers, thus creating an Arithmetic of the Infinite. His later abstract theory of the order-types of aggregates, in connection with which he has given a purely ordinal theory of the arithmetic continuum, has opened up a field of research of the greatest interest and importance.

HUGHES MEDAL.

The Hughes Medal is awarded to Sir Joseph Wilson Swan, F.R.S., for his invention of the incandescent electric lamp, and his other inventions and improvements in the practical applications of electricity. Not as directly included in the award, should be mentioned his inventions in dry-plate photography, which have so much increased our powers of experimental investigation.

On the motion of Sir Andrew Noble, seconded by Dr. P. L. Selater, a vote of thanks was accorded to the President for his address, with a request that he would allow it to be printed.

The Statutes relating to the election of Council and Officers were then read, and Sir William Ramsay and Dr. W. E. Wilson having been, with the consent of the Society, nominated Scrutators, the votes of the Fellows present were taken, and the following were declared duly elected as Council and Officers for the ensuing year:—

President.—Sir William Huggins, K.C.B., O.M., D.C.L., LL.D.

Treasurer.—Alfred Bray Kempe, M.A.

Secretaries.— { Joseph Larmor, D.Sc., D.C.L., LL.D.
 { Sir Archibald Geikie, D.C.L., Sc.D., LL.D.

Foreign Secretary.—Francis Darwin, M.A., M.B.

Other Members of the Council.—Shelford Bidwell, Sc.D.; George Albert Boulenger, F.Z.S.; Colonel David Bruce, R.A.M.C.; Frank Watson Dyson, M.A.; Prof. Percy Faraday Frankland, Ph.D.; Prof. Francis Gotch, D.Sc.; Ernest William Hobson, Sc.D.; Prof. John Newport Langley, Sc.D.; John Edward Marr, Sc.D.; Sir William Davidson Niven, K.C.B.; Prof. William Henry Perkin, Junior, Ph.D.; Prof. John Perry, D.Sc.; Adam Sedgwick, M.A.; William Napier Shaw, Sc.D.; Prof. William Augustus Tilden, D.Sc.; Rear-Admiral Sir William James Lloyd Wharton, K.C.B.

PRESENTS RECEIVED BY THE SOCIETY, 1904.

Photographic reproduction of a portrait of William Prout, F.R.S.

The Rev. T. J. Prout.

Series of Glass Positives of Celestial Objects, presented in accordance with the wish of the late Dr. Isaac Roberts, F.R.S.

Mrs. Roberts.

Bronze Medal struck in Commemoration of the Jubilee of the University of Wisconsin.

University of Wisconsin.

Emblematic plaque, commemorative of the 200th Anniversary of the Berlin Academy of Sciences.

Berlin Academy.

INCOME AND EXPENDITURE ACCOUNT.

GENERAL PURPOSES.

November 9th, 1908, to November 12th, 1904.

INCOME.		EXPENDITURE.	
	£ s. d.		£ s. d.
To Fees—		By Establishment Expenses—	
Admissions	10 0 0	Advertising	28 2 6
Compositions	300 0 0	Anniversary	24 5 6
Annual Contributions, 282 at £3 } 78 at £4 }	1,158 0 0	Coal and Lighting	167 14 7
"'s Reduction Fund	434 0 0	Electric Plant, Inspection and Repairs	9 15 9
	1,902 0 0	Fire Insurance	55 5 0
Investments—		House Expenses	178 6 3
Rents	671 6 0	Law Charges	7 0 6
Dividends and Interest	2,591 17 9	Miscellaneous	64 6 5
Income Tax Recovered	190 12 4	Office Expenses	100 7 9
	3,463 16 1	Postages and Petty Charges	98 13 3
Legacy from Dr. Thin	100 0 0	Printing (Miscellaneous), and Stationery	139 14 0
		Salaries and Wages	2,148 5 0
Publications—		Soirées and Receptions	128 2 4
Sales:		Taxes	29 12 4
"Philosophical Transactions"	548 2 6	Tea Expenses	20 8 4
"Proceedings"	289 13 2		3,199 19 6
"Catalogue"	8 15 6		313 0 8
Other Sales	11 9 9		
Less Commission	858 0 11	Library	
	92 18 3	Publications—	
Government Publication Grant	1,000 0 0	"Philosophical Transactions"	£ s. d.
	1,765 2 8	Printing	1,048 1 9
		Paper	243 17 3
		Engraving	296 13 5
		Lithography	0 8 9
		Binding	1,589 1 2

Financial Statement.

<p>"Proceedings"—</p> <p>Printing ... 554 1 7</p> <p>Paper ... 185 18 9</p> <p>Engraving and Lithography ... 116 4 0</p> <p>Special Publica- tions" Subventions Year Book and Obituary Notices ... 856 4 4</p> <p>Grants for Extraneous Publications, paid Do. not yet claimed ... 287 10 6</p> <p>3,059 6 6</p> <p>457 10 6</p> <p>3,516 17 0</p>	<p>7,029 17 2</p> <p>191 1 7</p> <p>£7,220 18 9</p>
<p>„ Balance, being Excess of Income over Expenditure</p>	
<p>£7,220 18 9</p>	

CATALOGUE OF SCIENTIFIC PAPERS, 1884-1900, AND SUBJECT INDEX, 1801-1900.

RECEIPTS.

<p>To Balance, as per last Account... ..</p> <p>„ Donations</p> <p>„ Transfer from Handley Fund</p>	<p>£ s. d.</p> <p>2,931 3 3</p> <p>1,550 0 0</p> <p>193 14 10</p> <p>£4,674 18 1</p>
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PAYMENTS.

<p>By Salaries, Wages, and Office Expenses</p> <p>„ Balance unexpended, as per Balance Sheet</p>	<p>£ s. d.</p> <p>2,212 8 1</p> <p>2,462 10 0</p> <p>£4,674 18 1</p>
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CASH ACCOUNT.

GENERAL PURPOSES.

November 9th, 1903, to November 12th, 1904.

RECEIPTS.

	£	s.	d.
To Balance at Bank, { Deposit Account, Nov. 9th, 1903	1,000	0	0
" " { Current Account ditto	2,230	10	9
" Balance in Hand, Petty Cash, ditto	14	14	9
" Income for year, as per Income and Expenditure Account (excluding amounts not received during the year)	7,145	14	3
" Receipts on account of Catalogue of Scientific Papers, as per Separate Account	1,743	14	10
" Other Receipts, namely—			
International Association of Academies—Subscriptions	262	4	9
International Catalogue—Interest to November 5th, 1903	60	0	0
Researches Account	322	12	0
" £3,200 Mortgage Loan 3½ per Cent. to the Duke of Norfolk, paid off	3,200	0	0
" Grant from Goldsmith's Company for—			
Radium Research	1,000	0	0
Interest thereon	1	11	7
Proceeds of Sale of Ceylon Reports	1,001	11	7
" Balance of Grants for Ceylon Reports, Vols. 1 and 2, still unexpended	12	11	0
" Rent of Fee Farm, Lewes, received on Account of 1903	17	7	5
	18	0	3
	<hr/>		
	£17,029	1	7

PAYMENTS.

	£	s.	d.
By Expenditure for the Year, as per Income and Expenditure Account (excluding amounts not paid during the year)	6,859	17	2
" Payments on account of Catalogue of Scientific Papers, as per Separate Account	2,212	8	1
" Other Payments, namely—			
Publication Grants made in 1902	55	0	0
" " " " " 1903	430	0	0
International Association of Academies—Sundry payments	2	5	6
Researches Account	632	7	10
" £3,286 4s. 3d. National War Loan 2½ per Cent. Stock	3,200	0	0
" Malta Fever Commission	59	6	6
" International Catalogue—Further Loans	1,000	0	0
" Balance at Bank, Nov. 12th, 1904, Deposit Account	500	0	0
Do.			
Radium Research	700	0	0
Research Fund	1,458	8	5
Do. do.	19	8	1
Current Account			
" Balance in hand, Petty Cash			
	<hr/>		
	£17,029	1	7

BALANCE SHEET.

GENERAL PURPOSES.

November 12th, 1904.

	£	s.	d.	£	s.	d.
LIABILITIES.						
To Catalogue of Scientific Papers—						
Balance of Fund	2,462	10	0			
International Association of Academies—						
Subscriptions unexpended	403	18	5			
Publication Grant—						
Grants for Extraneous Publications	105	0	0			
not yet claimed, 1903	170	0	0			
" " " 1904	275	0	0			
Researches Account, including Sleeping Sickness, Malaria, Tsetse Fly and other enquiries—	297	12	3			
Balance as per last Balance Sheet...	162	0	0			
Further Grants received	160	12	0			
Sales of Publications	620	4	3			
<i>Less Expenditure</i>	532	7	10			
	87	16	5			
Radium Research Fund...	1,001	11	7			
Ceylon Government for net proceeds of Sale of Ceylon Fisheries Report ...	12	11	0			
Balance of Grants for Ceylon Report, Vol. 1 and 2, still unexpended	17	7	5			
Income and Expenditure Account—						
Balance, as per last Balance Sheet	2,891	14	8			
<i>Add</i> Excess of Income over Expenditure for the Year...	191	1	7			
	3,082	16	3			
	<u>£7,343</u>	<u>11</u>	<u>1</u>			
ASSETS.						
By Cash at Bank, on Deposit Account ...	500	0	0			
" " " Radium Research Fund	700	0	0			
" " " Current Account	1,458	8	5			
" " " in hand	19	8	1			
International Catalogue Loan Account—						
As per last Balance Sheet	3,360	0	0			
Interest for the year	140	0	0			
Additional Loans	1,000	0	0			
<i>Less Repayments</i>	4,500	0	0			
	130	0	0			
Coral Reef Committee—						
Advance for Funafuti Report	231	3	7			
Malta Fever Commission	59	6	6			
Rent due, Wharnton Road	5	4	6			
	<u>£7,343</u>	<u>11</u>	<u>1</u>			

ESTATES AND PROPERTY OF THE ROYAL SOCIETY.

GENERAL PURPOSES.

Estate at Mablethorpe, Lincolnshire (55A. 2B. 2F.), rent £75 per annum.	
Ground Rent of House, No. 57, Basinghall Street, rent £380 per annum.	
" " of 23 houses in Wharton Road, West Kensington, rents £253 per annum.	
Fee Farm Rent, near Lewes, Sussex, £19 4s. per annum.	
Stevenson Bequest. Chancery Dividend. One-fourth annual interest on Balance of Bequest still in Court. (This year, £90 14s. 11d.)	
£12,000 Mortgage Loan, 3½ per Cent., to the Duke of Norfolk.	
£3,518 0s. 3d., 2½ per Cent. Consolidated Stock in Chancery, arising from sale of the Coleman Street Estate.	
£220 7s. 6d. India 3½ per Cent. Stock.	
£1,300 India 3 per Cent. Stock.—(Earl of Derby's Bequest.)	
£592 5s. 9d. Midland Railway Consolidated 2½ per Cent. Perpetual Guaranteed Preferential Stock.—(Stevenson Bequest.)	
£5,000 Madras Railway Guaranteed 5 per Cent. Stock.	
£2,725 Consolidated Great Northern Railway 4 per Cent. Perpetual Preference Stock.—(Stevenson Bequest.)	
£14,908 London and North Western Railway 4 per Cent. Consolidated Guaranteed Stock.—{ £12,150 General Purposes.	(Stevenson Bequest.)
£5,000 " " " Consolidated 4 per Cent. Preference Stock.	{ £2,758 " "
£5,000 North Eastern Railway 4 per Cent. Preference Stock.	
£2,760 " " " Consolidated 4 per Cent. Guaranteed Stock.—(Stevenson Bequest.)	
£3,333 London and South Western Railway 4 per Cent. Preferential Stock, 1881.	
£4,000 Southern Mahratia Railway 4 per Cent. Debenture Stock.	
£3,286 4s. 3d. National War Loan 2½ per Cent. Stock.	

TRUST FUNDS. CASH ACCOUNTS, 1904.

Scientific Relief Fund.

£26,000 L. & N.W. Railway 4 per Cent. Consolidated Guaranteed Stock.
 £27,200 Great Northern Railway 3 per Cent. Debenture Stock.
 £24,340 South Eastern Railway 5 per Cent. Perpetual Debenture Stock.
 £800 2½ per Cent. Annuities.

		£	s.	d.	£	s.	d.
<i>Dr.</i>							
To Balance, Income	...	1,593	8	5	707	10	7
" Dividends	...	885	17	10			
" Income Tax recovered	...				660	9	10
" Balance, Income	...				39	2	2
" Less Temporarily Invested	...						
" Expenses	...						
" By Grants	...						
" Balance, Income	...				1,794	5	5
" Less Temporarily Invested	...				885	17	10
					908	7	7
					£1,407	2	7

Trust Funds.

Donation Fund.

£5,030 Great Northern Railway Consolidated Perpetual 4 per Cent. Guaranteed Stock.
 The Trevelyan Bequest. £1,861 6s. 8d. Great Northern Railway 3 per Cent. Debenture Stock.

		£	s.	d.	£	s.	d.
To Balance	...	751	11	6			
" Dividends	...	244	19	11			
" Transfer from Jodrell Fund	...	131	10	10			
" Income Tax recovered	...	14	10	0			
					£1,142	12	3

£1,142 12 3

£1,142 12 3

Rumford Fund.

£2,367 2s. 6d. 2½ per Cent. Consolidated Stock.

To Balance	£	s.	d.	£	s.	d.
Dividends	62	1	8	122	3	1
" " " " " "	56	6	10			
" " " " " "	3	14	7			
" Income Tax recovered						
	£122	3	1			
By Balance						
				£122	3	1

Bakerian and Copley Medal Fund.

Sir Joseph Copley's Gift. £1,666 13s. 4d. 2½ per Cent. Consolidated Stock.
 £403 9s. 8d. 2½ per Cent. Annuities.

To Balance	£	s.	d.	£	s.	d.
" Dividends, 2½ per Cent. Annuities	64	15	2	6	2	6
" " " " " "	9	12	2	50	0	0
" Dividends—Sir J. Copley's Fund	39	13	6	4	0	0
" " " " " "	3	4	0	57	2	4
" Income Tax recovered						
	£117	4	10			
By Gold Medal—Prof. Sness						
" " " " " "						
" " " " " "						
" Bakerian Lecture—Prof. Rutherford						
" " " " " "						
" Balance						
	£117	4	10			

The Keck Bequest.

£960 Midland Railway 2½ per Cent. Debenture Stock.

To Dividends	£	s.	d.	£	s.	d.
" " " " " "	22	17	6	24	4	7
" " " " " "	1	7	1			
" Income Tax recovered						
	£24	4	7			
By Payment to Foreign Secretary						
				£24	4	7

Winstingham Fund.

£1,200 2½ per Cent. Consolidated Stock.

To Balance	£	s.	d.	£	s.	d.
" Dividends ... ..	...	...	...	31	9	7
" Income Tax recovered ... ..	...	...	...	28	11	2
	...	...	...	1	18	0
	<hr/>			£61	18	9
	<hr/>					
By Payment to Foundling Hospital ... ..	...	...	...	...	...	...
" Balance ... ..	...	...	...	...	...	...
	<hr/>			£61	18	9
	<hr/>					

Croonian Lecture Fund.

One-fifth of the clear rent of an Estate at Lambeth Hill, from the College of Physicians, about £56 per annum.

To Balance	£	s.	d.
" Rent	24	13	11
" Income Tax recovered	43	8	8
	3	2	1
	<hr/>		
	£71	4	8
	<hr/>		

Trust Funds.

£	s.	d.
55	8	9
15	15	11
<hr/>		
£71	4	8
<hr/>		

Davy Medal Fund.

£660 Madras Railway Guaranteed 5 per Cent. Stock.

To Balance	£	s.	d.
" Dividends	51	14	11
" Income Tax recovered	31	8	4
	1	17	11
	<hr/>		
	£85	1	2
	<hr/>		

£	s.	d.
31	14	10
53	6	4
<hr/>		
£85	1	2
<hr/>		

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The Gassiot Trust.

£10,000 Italian Irrigation Bonds, Oavour Canal.
 £725 2½ per Cent. Consolidated Stock.

	£	s.	d.		£	s.	d.
To Balance	252	14	10	By Payment to National Physical Laboratory ...	453	14	4
" Dividends	442	13	3	" Purchase of £500 Italian Irrigation Bonds ...	583	2	6
" £500 Bonds drawn	580	0	0	" £225 2½ per Cent. Consolidated Stock	203	7	11
" Income Tax recovered	27	2	0	" Balance	62	5	4
	<hr/>				<hr/>		
	£1,302	10	1		£1,302	10	1
	<hr/>				<hr/>		

Hambley Fund.

£4,798 Lancashire and Yorkshire Railway 4 per Cent. Consolidated Guaranteed Stock.

	£	s.	d.		£	s.	d.
To Dividends	182	18	4	By Transfer to Catalogue Account	193	14	10
" Income Tax recovered	10	16	6		<hr/>		
	<hr/>				£193	14	10
	<hr/>				<hr/>		

The Jodrell Fund.

£5,188 14s. 10d. 2½ per Cent. Consolidated Stock.

	£	s.	d.		£	s.	d.
To Dividends	183	7	4	By Transfer to Donation Fund	131	10	10
" Income Tax recovered	8	3	6		<hr/>		
	<hr/>				£131	10	10
	<hr/>				<hr/>		

Fee Reduction Fund.

£5,100 Metropolitan 3½ per Cent. Stock.
£9,533 London and North Western Railway 3 per Cent. Perpetual Debenture Stock.

	£	s.	d.	£	s.	d.	
To Balance ... ..	...	...	4	...	...	0
" Dividends .. ..	...	...	0	...	...	0
" Income Tax recovered ... ..	...	...	5	...	...	9
	£622	3	9		£318	6	4
	<hr/>			<hr/>			
By Transfer to Royal Society General Account ... ..	...	...	...	...	...	...
" Balance ... ..	...	...	...	...	...	...
	<hr/>			<hr/>			
	£622	3	9		£318	6	4

Darwin Medal Fund.

£2,500 South Eastern Railway 4 per Cent. (Perpetual) Debenture Stock.
£195 South Eastern Railway 3 per Cent. (Perpetual) Debenture Stock.

	£	s.	d.	£	s.	d.	
To Balance ... ..	...	...	2	...	...	4
" Dividends ... ..	...	...	9	...	...	6
" Income Tax recovered ... ..	...	...	5	...	...	4
	£318	6	4		£318	6	4
	<hr/>			<hr/>			
By Balance ... ..	...	...	...	...	...	...
	<hr/>			<hr/>			
	£318	6	4		£318	6	4

Johns Memorial Fund.

£1,000 London, Brighton, and South Coast Railway Consolidated Guaranteed 5 per Cent. Stock
£47 19s. 2d. 2½ per Cent. Annuities.

	£	s.	d.	£	s.	d.	
To Balance ... ..	...	...	5	...	...	0
" Dividends ... ..	...	...	10	...	...	0
" Income Tax recovered ... ..	...	...	4	...	...	7
	£188	4	7		£188	4	7
	<hr/>			<hr/>			
By Grant to Dr. J. A. Harker ... ..	...	...	...	...	...	...
" Advertising ... ..	...	...	...	...	...	...
" Balance ... ..	...	...	...	...	...	...
	<hr/>			<hr/>			
	£188	4	7		£188	4	7

Sylvester Medal Fund.

£795 16s. 5d. Local Loans 3 per Cent. Stock.

	£	s.	d.	£	s.	d.
o Balance	69	19	11	...	...	...
" Dividends	22	14	8	...	...	...
" Income Tax recovered ..	1	7	6	...	...	...
By Balance .. ..	...	...	...	...	...	...
				94	2	1
	<hr/>			<hr/>		
	£94	2	1	£94	2	1
	<hr/>			<hr/>		

Trust Funds.

Hughes Medal Fund.

£2,099 13s. 8d. Bath Corporation 3 per Cent. Stock
 £2,022 14s. 1d. Local Loans 3 per Cent. Stock.

	£	s.	d.	£	s.	d.
To Balance	193	11	3	...	...	...
" Dividends	117	14	11	...	...	...
" Income Tax recovered ..	7	1	9	...	...	...
By Gold Medal—Prof. Hittorf ...	...	...	...	...	...	...
" Gift do. ... ..	...	...	...	...	...	...
" Balance ... ..	...	...	...	...	...	...
				318	7	11
	<hr/>			<hr/>		
	£318	7	11	£318	7	11
	<hr/>			<hr/>		

Mackinnon Studentship Trust.

£4,141 13s. 9d. 2½ per Cent. Consolidated Stock.
 £1,000 Metropolitan 2½ per Cent. Stock.

£5,991 London and North Western Railway 3 per Cent. Perpetual Debenture Stock.

And the following Investments held by the Executors for Sale:—

- 10 Macdougall & Co., Ltd., £1 Shares fully paid.
- 50 Netley House Co., Ltd., £1 Shares fully paid.
- 117 Normal Powder Ammunition Co., Ltd., £1 Shares.
- 6 African Gold Coast Co., Fcs. 500 Shares.

The Executors also hold £3,334 London and North Western Railway 3 per Cent. Perpetual Debenture Stock, which will be transferred to the Society on the cessation of an annuity.

	£	s.	d.
To Balance	221	15	2
Interest	293	13	10
Income Tax recovered	12	12	10
<hr/>			
	£528	1	10

	£	s.	d.
By Grants	225	0	0
" Law Charges	3	12	10
" Advertising	1	15	3
" Balance	297	13	9
<hr/>			
	£528	1	10

THE NATIONAL PHYSICAL LABORATORY.

Statement, November 1st, 1908, to October 31st, 1904.

GENERAL FUND.

ANNUAL ACCOUNT.

	£	s.	d.		£	s.	d.
To Balance from last Statement...	1,895 13 11	By Laboratory Salaries and Maintenance	...	...	11,408 9 8
" Treasury Grant in aid of Salaries, &c.:—One Year to March, 1905	4,000 0 0	" Annual Transfer to Pension Fund	...	...	400 0 0
" Laboratory Revenue	4,400 0 0				
" Gasiot Trust Fund	453 14 4				
" Subscriptions	2,413 13 0				
" Income Tax recovered...	6 6 2	" Balance ...	...	...	1,360 17 9
			<u>£13,169 7 5</u>				<u>£13,169 7 5</u>

GENERAL FUND—continued.

CAPITAL ACCOUNT

	£	s.	d.		£	s.	d.
To Balance from last Statement ...	1,547	14	9	By Transfer to Building Fund ...	...	...	14 12 5
" Advance to Lathe House Equipment, 1903 ...	77	16	7	" " to Equipment Account ...	...	...	1,257 15 11
				" Balance ...	...	...	353 3 0
							<u>£1,625 11 4</u>

EQUIPMENT ACCOUNT.

	£	s.	d.		£	s.	d.
To Transfer from Capital Account ...	1,257	15	11	By Equipment of Bushy House ...	...	...	1,257 15 11
							<u>£1,257 15 11</u>

LATHE HOUSE ACCOUNT.

	£	s.	d.		£	s.	d.
To Paymaster-General towards Equipment ...	300	0	0	By Temporary Transfer from Capital Account, 1903 ...	77	16	7
" Balance ...	11	11	0	" Equipment ...	...	...	238 14 5
							<u>£311 11 0</u>

BUILDING FUND.

To Balance from last Statement ...	£	s.	d.	By H.M. Office of Works—Balance of Account ...	£	s.	d.
" Transfer from Capital Account ..	2	1	6		26	1	6
" Income Tax recovered ..	14	12	5				
	9	7	7				
	<hr/>				<hr/>		
	£26	1	6		£26	1	6
	<hr/>				<hr/>		

PENSION FUND ACCOUNT.

£2,210 8s. 5d. 2½ per Cent. Consolidated Stock.							
To Balance from last Statement ...	£	s.	d.	By Purchase of £488 5s. 8d. 2½ per Cent. Con- solidated Stock ...	£	s.	d.
" Annual Transfer from General Fund	20	10	10	" Balance ...	441	19	0
" Dividends on 2½ per Cent. Consols	400	0	0		23	7	0
" Income Tax recovered ...	43	17	10				
	0	17	4				
	<hr/>				<hr/>		
	£465	6	0		£465	6	0
	<hr/>				<hr/>		

BALANCE SHEET.

TRUST FUNDS

November 12th, 1904.

LIABILITIES.		ASSETS.	
	£	s.	d.
To Bakerian and Copley Medal Fund	57	2	4
" Brady Library Fund	45	19	11
" Buchanan Medal Fund	15	12	0
" Croonian Lecture Fund	15	15	11
" Darwin Medal Fund	318	6	4
" Davy Medal Fund	53	6	4
" Donation Fund	788	17	0
" Fee Reduction Fund	188	3	9
" Gassiot Trust Fund	62	5	4
" Gunning Fund	150	14	4
" Hughes Medal Fund	195	1	2
" Joulie Memorial Fund	87	17	7
" Mackinnon Studentship Fund	297	13	9
" National Physical Laboratory	1,725	16	9
" Rumford Fund	122	3	1
" Scientific Relief Fund	908	7	7
" Sylvester Medal Fund	94	2	1
" Wintringham Fund	30	9	2
	<hr/>		
	£5,157	14	5
By Cash at Bank on Account of Trust Funds:—		£	s.
General Account (Messrs. Roberts, Lubbock & Co.)	2,523	10	1
Scientific Relief Account (Messrs. Roberts, Lubbock & Co.)	908	7	7
" National Physical Laboratory:—			
Bank of England Western Branch:—			
General Account	1,360	17	9
Annual Account	353	3	0
Capital Account	23	7	0
Pension Fund Account	<hr/>		
	1,737	7	9
<i>Less</i> Lathe House Account	11	11	0
	<hr/>		
	1,725	16	9
	<hr/>		
	£5,157	14	5

A. B. KEMPE, *Treasurer*.

We, the Auditors of the Treasurer's Accounts on the part of the Council, have examined the above Accounts (except those of the National Physical Laboratory, which are to be separately audited), and have found them correct.

HUGH L. CALLENDAR,
ARCH. GEIKIE,
F. W. DYSON.

We the Auditors of the Treasurer's Accounts on the part of the Society, have examined the above Accounts (except those of the National Physical Laboratory, which are to be separately audited), and have found them correct.

SHELTFORD BIDWELL,
A. LIVERSIDGE,
G. CAREY FOSTER.

The following Table shows the progress and state of the Society with respect to the number of Fellows *as* at November 12, 1904 :—

	Patron and Royal.	Foreign.	Com-pounders.	£4 yearly.	£3 yearly.	Total.
Nov. 30, 1903 ..	2	46	113	80	273	514
Since Compounded			+ 1		— 1	
Since Elected ..	..	..	+ 4		+ 12	+ 16
Since Deceased ..	..		— 5	— 3	— 5	— 13
Nov. 12, 1904 ..	2	46	113	77	279	517

Account of Grants from the Donation Fund in 1904 :—

	£	s.	d.
Royal Society General Purposes Account, refund of Expenses in connection with the Meeting of the International Association of Academies in London	133	7	3
National Antarctic Expedition, to assist the Naturalists of the Expedition in unpacking and arranging the collection	60	0	0
	<u>£193</u>	<u>7</u>	<u>3</u>

MINUTES OF MEETINGS OF THE ROYAL SOCIETY, 1904.

January 21, 1904.

Mr. A. B. KEMPE, M.A., Treasurer and Vice-President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

In pursuance of the Statutes, the names of Candidates for election into the Society were read as follows :—

Adami, John George.	Harcourt, Leveson Francis Vernon.
Allen, Alfred Henry.	Harmer, Frederic William.
Anderson, Tempest.	Holland, Thomas Henry.
Arnold, Professor John Oliver.	Hopkins, Frederick Gowland.
Bather, Francis Arthur.	Joly, Professor Charles Jasper.
Biles, Professor John Harvard.	Jukes-Browne, Alfred John.
Blakesley, Thomas Holmes.	Knott, Cargill Gilston.
Bone, William Arthur.	Lamplugh, George William.
Brodie, Thomas Gregor.	Lees, Charles H.
Brown, Professor Adrian John.	Lewis, William James.
Budge, Ernest A. Wallis.	Macallum, A. B.
Burrard, Major Sidney Gerald.	MacArthur, John Stewart.
Campbell, John Edward.	MacBride, Professor Ernest William.
Chattaway, Frederick Daniel.	Major, Charles I. Forsyth.
Chattock, Arthur Prince.	Marsh, Professor Howard.
Davison, Charles.	Marsh, James Ernest.
Dines, William Henry.	Marshall, Hugh.
Dixon, Professor Alfred Cardew.	Maunder, Edward Walter.
Dixon, Henry H.	Meyrick, Edward.
Dobbie, Professor James Johnston.	Mill, Hugh Robert.
Durston, Sir Albert John.	Mitchell, Peter Chalmers.
Forster, Martin Onslow.	Muirhead, Alexander.
Gamble, Frederick William.	Nuttall, George Henry Falkiner.
Garrod, Archibald Edward.	Parsons, Professor Frederick Gymer.
Hadfield, Robert Abbott.	
Hamilton, Professor David James.	

Pocock, Reginald Innes.	Travers, Professor Morris William.
Prain, Major David.	Vernon, Horace Middleton.
Ridley, Henry Nicholas.	Wager, Harold.
Sclater, William Lutley.	Walker, Gilbert Thomas.
Searle, George F. C.	Watts, William Whitehead.
Shiple, Arthur Everett.	Whittaker, Edmund Taylor.
Sidgreaves, Rev. Walter.	Wilson, Professor Ernest.
Smith, Professor James Lorrain.	Wright, Almroth Edward.
Strutt, Robert John.	Young, Professor Alfred H.
Tarleton, Professor Francis Alexander.	

The following Papers were read:—

- I. "On the Acoustic Shadow of a Sphere." By LORD RAYLEIGH, O.M., F.R.S. With an Appendix by Professor A. LODGE giving the Values of Legendre's Functions from P_0 to P_{25} , at Intervals of 5 Degrees.
- II. "The Third Elliptic Integral and the Ellipsotomic Problem." By Professor A. G. GREENHILL, F.R.S.
- III. "On the Structure of the Palæozoic Seed, *Lagynosoma Lowari*, with a Statement of the Evidence upon which it is referred to *Lyginodendron*." By Professor F. W. OLIVER and Dr. D. H. SCOTT, F.R.S.
- IV. "The Significance of the Zoological Distribution, the Nature of the Mitoses, and the Transmissibility of Cancer." By Dr. E. F. BASHFORD and J. A. MURRAY, M.B., B.Sc. Communicated by Professor J. R. BRADFORD, F.R.S.

A Special General Meeting of the Society, convened by notice issued by direction of the Council, was then held, for the discussion of the following question:—

The constitution and functions of the Sectional Committees, and, in particular, whether it should form part of their functions to make recommendations to the Council as to the selection of Candidates for Fellowship and the selection of Foreign Members, and as to the award of Medals.

After the termination of the discussion the Secretaries reported to the meeting the action which the Council had taken with a view to the improvement of scientific education in schools.

January 28, 1904.

Professor J. W. JUDD, C.B., Vice-President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

The following Papers were read :—

- I. "Observations on the Sex of Mice.—Preliminary Paper." By Dr. S. M. COPEMAN, F.R.S., and F. G. PARSONS.
- II "Observations upon the Acquirement of Secondary Sexual Characters indicating the Formation of an Internal Secretion by the Testicle." By S. G. SHATTOCK and C. G. SELIGMANN. Communicated by Professor J. ROSE BRADFORD, F.R.S.
- III. "On the Part played by Benzene in Poisoning by Coal Gas." By Dr. R. STAEHELIN. Communicated by Professor E. H. STARLING, F.R.S.
- IV. "On the 'Islets of Langerhans' in the Pancreas." By H. H. DALE. Communicated by Professor E. H. STARLING, F.R.S.
- V. "The Morphology of the Retro-calcarine Region of the Cortex Cerebri." By Professor G. ELLIOT SMITH. Communicated by Professor A. MACALISTER, F.R.S.

February 4, 1904.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

The following Papers were read :—

- I. "The Reduction Division in Ferns." By R. GREGORY. Communicated by Professor H. MARSHALL WARD, F.R.S.
- II. "Cultural Experiments with 'Biologic Forms' of the *Erysiphaceæ*." By E. S. SALMON. Communicated by Professor H. MARSHALL WARD, F.R.S.

- III. "On the Origin of Parasitism in Fungi." By GEORGE MASSEE.
Communicated by Sir W. T. THISELTON-DYER, K.C.M.G.,
F.R.S.
- IV. "On the Effects of joining the Cervical Sympathetic Nerve with
the Chorda Tympani." By. Professor J. N. LANGLEY, F.R.S.,
and Dr. H. K. ANDERSON.
- V. "Conjugation of Resting Nuclei in an Epithelioma of the Mouse."
By Dr. E. F. BASHFORD and J. A. MURRAY. Communicated
by Professor J. ROSE BRADFORD, F.R.S.

February 11, 1904.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, followed by
Professor G. D. LIVEING, Vice-President, in the Chair.

A List of the Presents received was laid on the table, and thanks
ordered for them.

The following Papers were read:—

- I. "On the Compressibilities of Oxygen, Hydrogen, Nitrogen, and
Carbonic Oxide between One Atmosphere and Half an
Atmosphere of Pressure; and on the Atomic Weights of
the Elements concerned.—Preliminary Notice." By LORD
RAYLEIGH, O.M., F.R.S.
- II. "A New Method of detecting Electrical Oscillations." By
Dr. J. A. EWING, F.R.S., and L. H. WALTER.
- III. "On the High Temperature Standards of the National Physical
Laboratory.—An Account of a Comparison of Platinum
Thermometers and Thermojunctions with the Gas-thermo-
meter." By Dr. J. A. HARKER. Communicated by Dr.
R. T. GLAZEBROOK, F.R.S.
- IV. "Constant Standard Silver Trial-Plates." By EDWARD MATHEY.
Communicated by Sir WILLIAM CROOKES, F.R.S.
- V. "On Certain Properties of the Alloys of Silver and Cadmium."
By Dr. T. KIRKE ROSE. Communicated by C. T. HEYCOCK,
F.R.S.
- VI. "Sunspot Variation in Latitude, 1861—1902." By Dr.
W. J. S. LOCKYER. Communicated by Sir J. NORMAN
LOCKYER, K.C.B., F.R.S.
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February 18, 1904.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

The following Papers were read :—

- I. "Further Researches on the Temperature Classification of Stars." By Sir J. NORMAN LOCKYER, K.C.B., F.R.S.
- II. "Theory of Amphoteric Electrolytes." By Professor J. WALKER, F.R.S.
- III. "Note on the Formation of Solids at Low Temperatures, particularly with regard to Solid Hydrogen." By Professor M. W. TRAVERS. Communicated by Sir WILLIAM RAMSAY, K.C.B., F.R.S.
- IV. "Atmospherical Radio-activity in High Latitudes." By G. C. SIMPSON. Communicated by Professor A. SCHUSTER, F.R.S.

February 25, 1904.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

The following Papers were read :—

- I. "Electromotive Phenomena in Mammalian Non-Medullated Nerve." By Dr. N. H. ALCOCK. Communicated by Dr. A. D. WALLER, F.R.S.
- II. "Further Observations on the *Rôle* of the Blood-Fluids in connection with Phagocytosis." By Dr. A. E. WRIGHT and Captain S. R. DOUGLAS. Communicated by Sir J. BURDON SANDERSON, Bart., F.R.S.
- III. "On Mechanical and Electrical Response in Plants." By Professor J. C. BOSE. Communicated by Professor S. H. VINES, F.R.S.

- IV. "On the Compressibility of Solids." By J. Y. BUCHANAN, F.R.S.
- V. "A Contribution to the Study of the Action of Indian Cobra Poison." By R. H. ELLIOT, Major, I.M.S. Communicated by Sir THOMAS FRASER, F.R.S.
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March 3, 1904.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, followed by Professor J. W. JUDD, C.B., Vice-President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

In pursuance of the Statutes, the names of the Candidates recommended for election into the Society were read, as follows :—

Brodie, Thomas Gregor.
Burrard, Sidney Gerald.
Dixon, Alfred Cardew.
Dobbie, James Johnstone.
Holland, Thomas Henry.
Joly, Charles Jasper.
Marshall, Hugh.
Meyrick, Edward.

Muirhead, Alexander.
Nuttall, George Henry F.
Shipley, Arthur Everett.
Travers, Morris William.
Wager, Harold.
Walker, Gilbert Thomas.
Watts, William Whitehead.

The following Papers were read :—

- I. "An Inquiry into the Nature of the Relationship between Sun-spot Frequency and Terrestrial Magnetism." By Dr. C. CHREE, F.R.S.
- II. "The Optical Properties of Vitreous Silica." By J. W. GIFFORD and W. A. SHENSTONE, F.R.S.
- III. "A Radial Area-scale." By R. W. K. EDWARDS. Communicated by Professor GREENHILL, F.R.S.
- IV. "The Spectra of Antarian Stars in Relation to the Fluted Spectrum of Titanium." By A. FOWLER, A.R.C.S., F.R.A.S. Communicated by Professor CALLENDAR, F.R.S.
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March 10, 1904.

Professor LIVEING, Vice-President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

The following Papers were read:—

- I. "On Electric Resistance Thermometry at the Temperature of Boiling Hydrogen." By Professor J. DEWAR, F.R.S.
 - III. "A Study of the Radio-activity of certain Minerals and Mineral Waters." By Hon. R. J. STRUTT. Communicated by Lord RAYLEIGH, O.M., F.R.S.
 - III. "Some Uses of Cylindrical Lens-Systems." By G. J. BURCH, F.R.S.
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March 17, 1904.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

The following Papers were read:—

- I. "Physical Constants at Low Temperatures. (1) The Densities of Solid Oxygen, Nitrogen, Hydrogen, etc." By Professor J. DEWAR, F.R.S.
- II. "The Specific Heats of Metals, and the Relation of Specific Heat to Atomic Weight.—Part III." By Professor W. A. TILDEN, F.R.S.
- III. "On the Construction of some Mercury Standards of Resistance, with a Determination of the Temperature Coefficient of Resistance of Mercury." By F. E. SMITH. Communicated by Dr. R. T. GLAZEBROOK, F.R.S.

- IV. "On the Effect of a Magnetic Field on the Rate of Subsidence of Torsional Oscillations in Wires of Nickel and Iron, and the Changes produced by Drawing and Annealing." By Professor A. GRAY, F.R.S., and A. WOOD.
- V. "On a Criterion which may serve to Test various Theories of Inheritance." By Professor K. PEARSON, F.R.S.
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March 24, 1904.

Sir M. FOSTER, K.C.B., Vice-President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

The Croonian Lecture: "The Chemical Regulation of the Secretory Process," was delivered by Professor E. H. STARLING, F.R.S., and Dr. W. M. BAYLISS, F.R.S.

The Society adjourned over the Easter recess to Thursday, April 28.

April 28, 1904.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

The Royal Medal awarded to Sir David Gill, in 1903, was handed to the recipient by the President.

The following Papers were read:—

- I. "Further Experiments on the Production of Helium from Radium." By Sir WILLIAM RAMSAY, K.C.B., F.R.S., and F. SODDY.
- II. "The Effects of Changes of Temperature on the Modulus of Torsional Rigidity of Metal Wires." By Dr. F. HORTON. Communicated by Professor J. J. THOMSON, F.R.S.
- III. "The Sparking Distance between Electrically-charged Surfaces. Preliminary Note." By Dr. P. E. SHAW. Communicated by Professor J. H. POYNTING, F.R.S.

- IV. "Studies on Enzyme Action. Part II.—The Rate of the Change conditioned by Sucro-clastic Enzymes, and its Bearing on the Law of Mass Action. Part III.—The Influence of the Products of Change on the Rate of Change conditioned by Sucro-clastic Enzymes." By Dr. E. F. ARMSTRONG. Communicated by Professor H. E. ARMSTRONG, F.R.S.
- V. "Studies on Enzyme Action. Part IV.—The Sucro-clastic Action of Acids as contrasted with that of Enzymes." By Dr. E. F. ARMSTRONG and R. J. CALDWELL. Communicated by Professor H. E. ARMSTRONG, F.R.S.
- VI. "Enzyme Action as bearing on the Validity of the Ionic-Dissociation Hypothesis, and on the Phenomena of Vital Change." By Professor H. E. ARMSTRONG, F.R.S.
- VII. "On the Changes of Thermo-electric Power produced by Magnetisation, and their Relation to Magnetic Strains." By Dr. S. BIDWELL, F.R.S.
- VIII. "The Behaviour of the Short-Period Atmospheric Pressure Variation over the Earth's Surface." By Sir NORMAN LOCKYER, K.C.B., F.R.S., and Dr. W. J. S. LOCKYER.

May 5, 1904.

Annual Meeting for the Election of Fellows.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, in the Chair.

The Statutes relating to the Election of Fellows having been read, Professor Liversidge and Professor Minchin were, with the consent of the Society, nominated Scrutators, to assist the Secretaries in the examination of the balloting lists.

The votes of the Fellows present were collected, and the following Candidates were declared duly elected into the Society:—

Brodie, Thomas Gregor.
 Burrard, Sidney Gerald.
 Dixon, Alfred Cardew.
 Dobbie, James Johnstone.
 Holland, Thomas Henry.
 Joly, Charles Jasper.
 Marshall, Hugh.
 Meyrick, Edward.

Muirhead, Alexander.
 Nuttall, George Henry F.
 Shipley, Arthur Everett.
 Travers, Morris William.
 Wager, Harold.
 Walker, Gilbert Thomas.
 Watts, William Whitehead.

Thanks were given to the Scrutators.

May 5, 1904.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

The following papers were read :—

- I. "Experiments on a Method of Preventing Death from Snake Bite, capable of Common and Easy Practical Application." By Sir LAUDER BRUNTON, F.R.S., Sir JOSEPH FAYRER, Bart., F.R.S., and Dr. L. ROGERS.
- II. "A Research into the Heat Regulation of the Body by an Investigation of Death Temperatures." By Dr. E. M. CORNER, and Dr. J. E. H. SAWYER. Communicated by Professor J. N. LANGLEY, F.R.S.
- III. "A Note on the Action of Radium on Micro-organisms." By Dr. A. B. GREEN. Communicated by Sir MICHAEL FOSTER, K.C.B., F.R.S.
- IV. "Further Note on Some Additional Points in Connection with Chloroformed Calf Vaccine." By Dr. A. B. GREEN, Communicated by Dr. W. H. POWER, F.R.S.
- V. "On Certain Physical and Chemical Properties of Solutions of Chloroform in Water, Saline, Serum, and Hæmoglobin. A Contribution to the Chemistry of Anæsthesia.—Preliminary Communication." By Professor B. MOORE and Dr. H. E. ROAF. Communicated by Professor C. S. SHERRINGTON, F.R.S.
- VI. "Note on the Lymphatic Glands in Sleeping Sickness." By Captain E. D. W. GREIG, I.M.S., and Lieutenant A. C. H. GRAY, R.A.M.C. Communicated by Colonel BRUCE, F.R.S.
- VII. "Corrigenda in Mr. W. Shanks's Tables 'On the Number of Figures in the Reciprocal of a Prime.'" By Lieutenant-Colonel A. CUNNINGHAM, R.E. Communicated by the Secretaries.

May 19, 1904.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, in the Chair.

Professor Ernest Rutherford, elected 1903, was admitted into the Society.

Dr. T. G. Brodie, Professor A. C. Dixon, Professor J. J. Dobbie, Mr. A. E. Shipley, Professor M. W. Travers, and Mr. W. W. Watts were admitted into the Society.

A List of the Presents received was laid on the table, and thanks ordered for them.

THE BAKERIAN LECTURE: "The Succession of Changes in Radio active Bodies" was delivered by Professor ERNEST RUTHERFORD, F.R.S.

The following Papers were read:—

- I. "The Spectrum of the Emanation of Radium." By Sir WILLIAM RAMSAY, K.C.B., F.R.S., and Professor COLLIE, F.R.S.
- II. "Experimental Determinations for Saturated Solutions." By the EARL OF BERKELEY. Communicated by F. H. NEVILLE, F.R.S.
- III. "On the Liquefied Hydrides of Phosphorus, Sulphur, and the Halogens, as Conducting Solvents.—Part I." By D. MCINTOSH and B. D. STEELE. Communicated by Sir WILLIAM RAMSAY, K.C.B., F.R.S.
- IV. "On the Liquefied Hydrides of Phosphorus, Sulphur, and the Halogens, as Conducting Solvents.—Part II." By E. H. ARCHIBALD and D. MCINTOSH. Communicated by Sir WILLIAM RAMSAY, K.C.B., F.R.S.
- V. "On the General Theory of Integration." By Dr. W. H. YOUNG. Communicated by Dr. HOBSON, F.R.S.

The Society adjourned over the Whitsuntide Recess to Thursday, June 2.

June 2, 1904.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, in the Chair.

Mr. Harold Wager and Dr. G. H. F. Nuttall were admitted into the Society.

A List of the Presents received was laid on the table, and thanks ordered for them.

The following Papers were read :—

- I. "On the Electric Equilibrium of the Sun." By Professor SVANTE ARRHENIUS. Communicated by Sir WILLIAM HUGGINS, Pres. R.S.
- II. "Colours in Metal Glasses and in Metallic Films." By J. C. MAXWELL GARNETT. Communicated by Professor LARMOR, Sec. R.S.
- III. "On a Direct Method of Measuring the Coefficient of Volume Elasticity of Metals." By A. MALLOCK, F.R.S.
- IV. "A Method of Measuring Directly High Osmotic Pressures." By the EARL OF BERKELEY and E. G. J. HARTLEY. Communicated by W. C. D. WHETHAM, F.R.S.
- V. "The Advancing Front of the Train of Waves emitted by a Theoretical Hertzian Oscillator." By Professor A. E. H. LOVE, F.R.S.
- VI. "On the General Circulation of the Atmosphere in Middle and Higher Latitudes." By Dr. W. N. SHAW, F.R.S.
- VII. "On the Magnetic Changes of Length in Annealed Rods of Cobalt and Nickel." By Dr. SHELFORD BIDWELL, F.R.S.
- VIII. "On the Electric Effect of Rotating a Dielectric in a Magnetic Field." By Dr. H. A. WILSON. Communicated by Professor J. J. THOMSON, F.R.S.

June 9, 1904.

Professor J. W. JUDD, C.B., Vice-President, in the Chair.

Mr. Edward Meyrick, Professor Charles J. Joly, and Dr. Hugh Marshall were admitted into the Society.

A List of the Presents received was laid on the table, and thanks ordered for them.

The following Papers were read :—

- I. "Notes on the Statolith Theory of Geotropism. (I) Experiments on the Effects of Centrifugal Force. (II) The Behaviour of Tertiary Roots." By F. DARWIN, For. Sec., R.S., and Miss D. F. M. PERTZ.

- II. "The Fossil Flora of the Culm Measures of North-West Devon, and the Palæobotanical Evidence with regard to the Age of the Beds." By E. A. NEWELL ARBER. Communicated by Professor T. MCKENNY HUGHES, F.R.S.
- III. "On the Structure and Affinities of Palæodiscus and Agelacrinus." By W. K. SPENCER. Communicated by Professor W. J. SOLLAS, F.R.S.
- IV. "On the Ossiferous Cave-Deposits of Cyprus, with Descriptions of the Remains of *Elephas Cypriotes*." By Miss D. M. A. BATE. Communicated by Dr. H. WOODWARD, F.R.S.
- V. "On the Physical Relation of Chloroform to Blood." By Dr. A. D. WALLER, F.R.S.
- VI. "Contributions to the Study of the Action of Sea-Snake Venoms." By Sir THOMAS R. FRASER, F.R.S., and Major R. H. ELLIOT, I.M.S.
- VII. "On the Action of the Venom of *Bungarus cœruleus* (the Common Krait)." By Major R. H. ELLIOT, I.M.S., W. C. SILLAR, and G. S. CARMICHAEL. Communicated by Sir THOMAS R. FRASER, F.R.S.
- VIII. "On the Combining Properties of Serum Complements, and on Complementoids." By Professor R. MUIR and C. H. BROWNING. Communicated by Sir J. BURDON SANDERSON, Bart., F.R.S.

June 16, 1904.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, in the Chair.

The Right Hon. Donald Alexander Smith, Baron Strathcona, was balloted for and elected a Fellow of the Society.

Dr. Alexander Muirhead was admitted into the Society.

A List of the Presents received was laid on the table, and thanks ordered for them.

The following Papers were read :—

- I. "The Origin and Growth of Ripple-mark." By (Mrs.) HERTHA AYRTON. Communicated by Professor W. E. AYRTON, F.R.S.

- II. "On the Seismic Effect of Tidal Stresses." By R. D. OLDHAM. Communicated by Professor J. W. JUDD, C.B., F.R.S.
- III. "On Flame Spectra." By C. DE WATTEVILLE. Communicated by Professor A. SCHUSTER, F.R.S.
- IV. "An Experiment illustrating Harmonic Undertones." By H. KNAPMAN. Communicated by Dr. G. J. BURCH, F.R.S.
- V. "A Probable Cause of the Yearly Variation of Magnetic Storms and Auroræ." By Sir NORMAN LOCKYER, K.C.B., F.R.S., and Dr. W. J. S. LOCKYER.
- VI. "On the Relation between the Spectra of Sun-spots and Stars." By Sir NORMAN LOCKYER, K.C.B., F.R.S.
- VII. "On the Action of Wood on a Photographic Plate in the Dark." By Dr. W. J. RUSSELL, F.R.S.
- VIII. "The Retardation of Combustion by Oxygen." By Professor H. E. ARMSTRONG, F.R.S.
- IX. "The Absorption and Thermal Evolution of Gases occluded in Charcoal at Low Temperatures." By Professor J. DEWAR, F.R.S.
- X. "Direct Separation of the Most Volatile Gases from Air without Liquefaction." By Professor J. DEWAR, F.R.S.
- XI. "On the Influence of the Time Factor on the Correlation between Barometric Heights at Two Stations 1,000 Miles apart." By Miss F. E. CAVE-BROWNE-CAVE. Communicated by Professor K. PEARSON, F.R.S.
- XII. "The Decomposition of Ammonia by Heat." By Dr. E. P. PERMAN and G. A. S. ATKINSON. Communicated by Sir WILLIAM RAMSAY, K.C.B., F.R.S.
- XIII. "On the Action of Radium Emanations on Diamond." By Sir WILLIAM CROOKES, F.R.S.
- XIV. "The Lethal Concentration of Acids and Bases in respect of *Paramecium aurelia*." By J. O. WAKELIN BARRATT, M.D. Communicated by Sir VICTOR HORSLEY, F.R.S.
- XV. "A Memoir on the Theory of Order as defined by Boundaries." By EDWARD T. DIXON. Communicated by Major MACMAHON, R.A., F.R.S.

The Society adjourned over the Long Vacation to Thursday, November 17.

November 17, 1904.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, in the Chair.

The Right Hon. Donald Alexander Smith, Baron Strathcona, was admitted into the Society.

A List of the Presents received was laid on the table, and thanks ordered for them.

In pursuance of the Statutes, notice of the ensuing Anniversary Meeting was given from the Chair.

Dr. Shelford Bidwell, Professor Carey Foster, and Professor A. Liversidge were elected Auditors of the Treasurer's accounts on the part of the Society.

The following Papers, received during the Recess and published, or in course of publication, in accordance with the Standing Orders of Council, were read in title:—

- “Studies on Enzyme Action : The Effect of ‘ Poisons ’ on the Rate of Decomposition of Hydrogen Peroxide by Hæmase.” By GEORGE SENTER, Ph.D., B.Sc. Communicated by Professor STARLING, F.R.S.
- “Hydrolysis of Cane Sugar by *d*- and *l*-Camphor- β -Sulphonic Acid.” By ROBERT JOHN CALDWELL, B.Sc. Communicated by Professor ARMSTRONG, F.R.S.
- “Studies on Enzyme Action. V.—Hydrolysis of Isomeric Glucosides and Galactosides by Acids and Enzymes.” By EDWARD FRANKLAND ARMSTRONG, Ph.D. Communicated by Professor ARMSTRONG, F.R.S.
- “Studies on Enzyme Action. VI.—The Sucroclastic Action of Acids as contrasted with that of Enzymes. Part II.” By EDWARD FRANKLAND ARMSTRONG, Ph.D., and ROBERT JOHN CALDWELL. Communicated by Professor ARMSTRONG, F.R.S.
- “On the Production of a Specific Gastrotoxic Serum.—Preliminary Communication.” By CHARLES BOLTON, M.D., B.Sc. Communicated by Professor SIDNEY MARTIN, F.R.S.

- “On the Action exerted upon the *Staphylococcus pyogenes* by Human Blood Fluids, and on the Elaboration of Protective Elements in the Human Organism in Response to Inoculations of a *Staphylococcus Vaccine*.” By A. E. WRIGHT, M.D., and STEWART R. DOUGLAS, M.R.C.S., Captain I.M.S. Communicated by Sir BURDON SANDERSON, Bart., F.R.S.
- “On the Action exerted upon the Tubercle Bacillus by Human Blood Fluids, and on the Elaboration of Protective Elements in the Human Organism in Response to Inoculations of a Tubercle Vaccine.” By A. E. WRIGHT, M.D., and STEWART R. DOUGLAS, M.R.C.S., Captain I.M.S. Communicated by Sir BURDON SANDERSON, Bart., F.R.S.
- “On the Density of Nitrous Oxide.” By LORD RAYLEIGH, O.M., F.R.S.

The following Papers were read:—

- I. “Air Resistance encountered by Projectiles at Velocities up to 4,500 Feet per Second.” By A. MALLOCK, F.R.S.
- II. “Theory of Amphoteric Electrolytes. Part II.” By Professor JAMES WALKER, F.R.S.
- III. “Enhanced Lines of Titanium, Iron, and Chromium in the Fraunhoferic Spectrum.” By Sir NORMAN LOCKYER, K.C.B., F.R.S., and F. E. BAXANDALL.
- IV. “On the Group IV Lines of Silicium.” By Sir NORMAN LOCKYER, K.C.B., F.R.S., and F. E. BAXANDALL.
- V. “The Electrical Conductivity and other Properties of Sodium Hydroxide in Aqueous Solution, as elucidating the Mechanism of Conduction.” By W. R. BOUSFIELD, K.C., M.P., and Dr. T. MARTIN LOWRY. Communicated by Professor H. E. ARMSTRONG, F.R.S.
- VI. “On the Wetting of Cotton by Water and by Water Vapour. By Professor D. ORME MASSON, F.R.S.

November 24, 1904.

Major MACMAHON, R.A., in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

In pursuance of the Statutes, notice of the ensuing Anniversary Meeting was given from the Chair, and the list of the Officers and Council for the ensuing year proposed by the Council for election was read as follows:—

President.—Sir William Huggins, K.C.B., O.M., D.C.L., LL.D.

Treasurer.—Alfred Bray Kempe, M.A.

Secretaries.— { Professor Joseph Larmor, D.Sc., D.C.L., LL.D.
 { Sir Archibald Geikie, D.C.L., Sc.D., LL.D.

Foreign Secretary.—Francis Darwin, M.A., M.B.

Other Members of the Council.—Shelford Bidwell, Sc.D.; George Albert Boulenger, F.Z.S.; Colonel David Bruce, R.A.M.C.; Frank Watson Dyson, M.A.; Professor Percy Faraday Frankland, Ph.D.; Professor Francis Gotch, D.Sc.; Ernest William Hobson, Sc.D.; Professor John Newport Langley, Sc.D.; John Edward Marr, Sc.D.; Sir William Davidson Niven, K.C.B.; Professor William Henry Perkin, Junior, Ph.D.; Professor John Perry, D.Sc.; Adam Sedgwick, M.A.; William Napier Shaw, Sc.D.; Professor William Augustus Tilden, D.Sc.; Rear-Admiral Sir William James Lloyd Wharton, K.C.B.

The following Papers were read:—

- I. "On the Refractive Indices of the Elements." By C. CUTHBERTSON. Communicated by Professor F. T. TROUTON, F.R.S.
 - II. "The Flow of Water through Pipes. Experiments on Stream-line Motion and the Measurement of Critical Velocity." By Drs. H. T. BARNES, and E. G. COKER. Communicated by Professor OSBORNE REYNOLDS, F.R.S.
 - III. "On Galvanic Cells produced by the Action of Light. Preliminary Communication." By Dr. M. WILDERMAN. Communicated by Dr. L. MOND, F.R.S.
 - IV. "Some Physical Characters of the Sodium Borates, with a New and Rapid Method for the Determination of Melting Points." By C. H. BURGESS and A. HOLT, Junior. Communicated by Professor H. B. DIXON, F.R.S.
 - V. "On the Convergence of Infinite Series of Analytic Functions." By H. A. WEBB. Communicated by Professor A. R. FORSYTH, F.R.S.
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November 30, 1904.

ANNIVERSARY MEETING.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, in the Chair.

The Report of the Auditors of the Treasurer's accounts was read, and the thanks of the Society were given to the Treasurer and to the Auditors.

The List of Fellows deceased and Fellows elected into the Society since the last Anniversary was read.

The Report to the Society from the Council upon the work during the past year was, upon the motion of the President, received.

The President delivered his Anniversary Address, and, on the motion of Sir Andrew Noble, seconded by Dr. P. L. Sclater, the thanks of the Society were given to the President for his Address, and he was requested to allow it to be printed.

The Awards of the Medals for the year were announced as follows, and the Medals were presented from the Chair :—

The Copley Medal.....	To Sir William Crookes, F.R.S.
The Rumford Medal ...	„ Professor Ernest Rutherford, F.R.S.
A Royal Medal	„ Col. David Bruce, R.A.M.C., F.R.S.
A Royal Medal	„ Professor William Burnside, F.R.S.
The Davy Medal	„ Dr. W. H. Perkin, jun., F.R.S.
The Darwin Medal	„ Mr. William Bateson, F.R.S.
The Hughes Medal	„ Sir J. Wilson Swan, F.R.S.
The Sylvester Medal...	„ Professor Dr. Georg Cantor.

The President having, with the consent of the Society, nominated Sir William Ramsay and Dr. W. E. Wilson as scrutators to assist the Secretaries in examining the balloting lists for the election of Council and Officers, the votes of the Fellows present were taken. The Scrutators reported that the Council and Officers nominated at the preceding meeting had been duly elected, and their names were accordingly announced from the Chair.

The thanks of the Society were given to the Scrutators.

December 1, 1904.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

The President announced that he had appointed as Vice-Presidents—

The Treasurer.

Prof. J. N. Langley.

Sir W. D. Niven.

Prof. W. A. Tilden.

The following Papers were read :—

- I. "The Ascent of Water in Trees." By Dr. A. J. EWART. Communicated by FRANCIS DARWIN, For. Sec. R.S.
- II. "On the Presence of Tyrosinases in the Skins of some Pigmented Vertebrates." By Miss F. M. DURHAM. Communicated by W. Bateson, F.R.S.
- III. "On the Structure and Affinities of Fossil Plants from the Palæozoic Rocks—V. On a New Type of Sphenophyllaceous Cone (*Sphenophyllum fertile*), from the Lower Coal Measures." By Dr. D. H. SCOTT, F.R.S.
- IV. "On Chemical Combination and Toxic Action as exemplified in Hæmolytic Sera." By Professor R. MUIR and C. H. BROWNING. Communicated by Dr. C. J. MARTIN, F.R.S.
- V. "Histological Studies on Cerebral Localisation. Part II." By Dr. A. W. CAMPBELL. Communicated by Professor SHERRINGTON, F.R.S.

December 8, 1904.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

The following Papers were read :—

- I. "Memoir on the Theory of the Partitions of Numbers. Part III." By Major P. A. MACMAHON, F.R.S.

- II. "Note on a Means of Producing a High-Voltage Continuous or 'Pertinacious' Current." By Sir OLIVER LODGE, F.R.S.
 - III. "The Effect of Liquid Air Temperatures on the Mechanical and other Properties of Iron and its Alloys." By Sir JAMES DEWAR, F.R.S., and R. A. HADFIELD.
 - IV. "The *Rôle* of Diffusion during Catalysis by Colloidal Metals and Similar Substances." By Dr. H. J. S. SAND. Communicated by Professor J. H. POYNTING, F.R.S.
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December 15, 1904.

Sir WILLIAM HUGGINS, K.C.B., O.M., President, in the Chair.

A List of the Presents received was laid on the table, and thanks ordered for them.

The following Papers were read :—

- I. "On the Ultra-Violet Spectrum of Gadolinium." By Sir WILLIAM CROOKES, F.R.S.
- II. "An Analysis of the Results from the Falmouth Magnetographs on 'Quiet' Days during the Twelve Years 1891—1902." By Dr. C. CHREE, F.R.S.
- III. "The Halogen Hydrides as Conducting Solvents. Part III. Preliminary Note." By B. D. STEELE. Communicated by Sir WILLIAM RAMSAY, K.C.B., F.R.S.
- IV. "The Halogen Hydrides as Conducting Solvents. Part IV. Preliminary Note." By B. D. STEELE, D. MCINTOSH, and E. H. ARCHIBALD. Communicated by Sir WILLIAM RAMSAY, K.C.B., F.R.S.
- V. "Effects of Temperature and Pressure on the Thermal Conductivities of Solids. Part I. The Effect of Temperature on the Thermal Conductivities of some Electrical Insulators." By Dr. C. H. LEES. Communicated by Professor A. SCHUSTER, F.R.S.

- VI. "The Basic Gamma Function and the Elliptic Functions." By
Rev. F. H. JACKSON, R.N. Communicated by Professor
A. R. FORSYTH, F.R.S.
- VII. "On the Normal Series Satisfying Linear Differential Equations."
By E. CUNNINGHAM. Communicated by Dr. H. F. BAKER,
F.R.S.

The Society adjourned over the Christmas recess to Thursday,
January 19, 1905.

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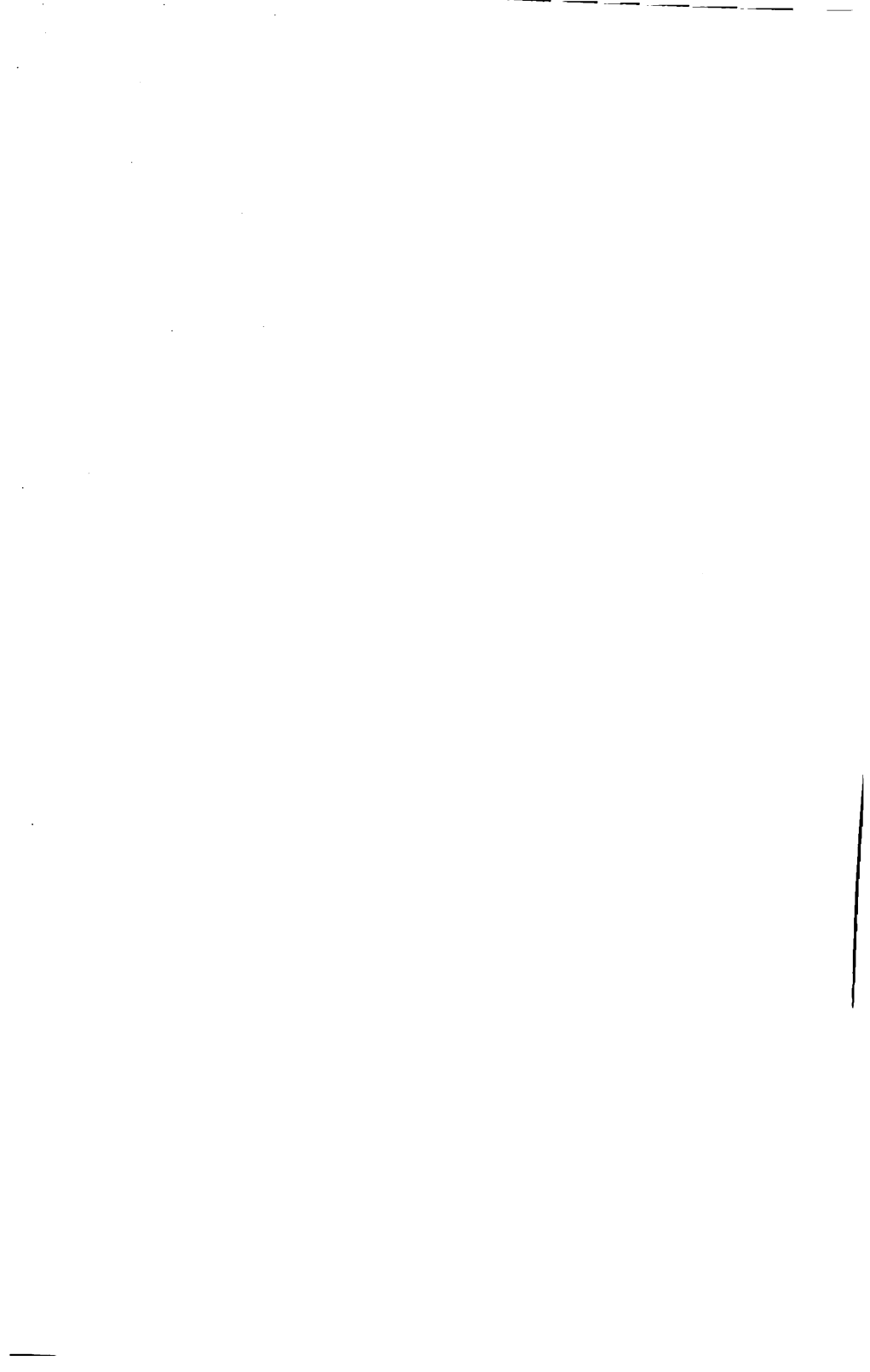
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